THE ARCHITECT & BUILDING NEWS

IN THIS ISSUE

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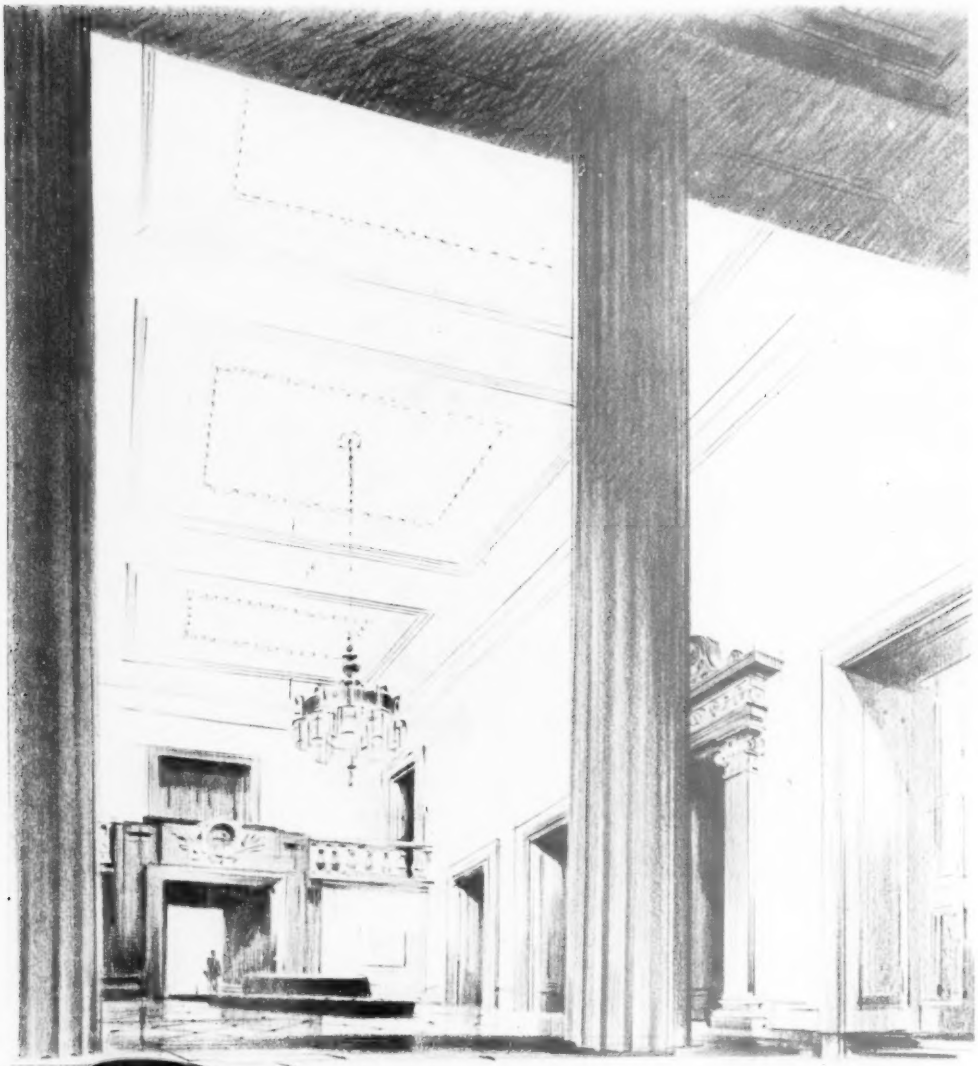

In character, manners, and style, the supreme excellence is simplicity . . . in interior decoration this is most readily achieved by the use of Walpamur Quality Paints.

THE WALPAMUR CO LTD · DARWEN AND LONDON

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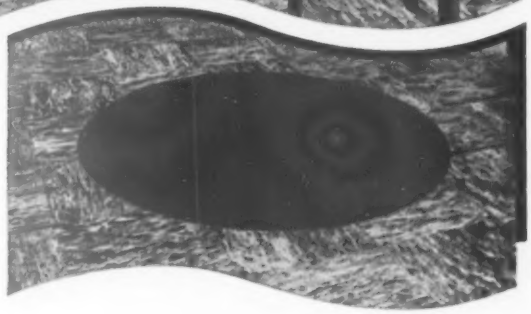

FUNCTIONAL *Beauty*

This office at the Doncaster Co-operative Society is a picture of functional beauty. In no small measure this is due to the attractive colour and subtle design of its Dunlop Rubber Flooring. But the picture cannot show the quiet, the resilience and the long-lasting wear that Dunlop Rubber Flooring provides. Today more and more Dunlop Rubber Flooring is being installed.

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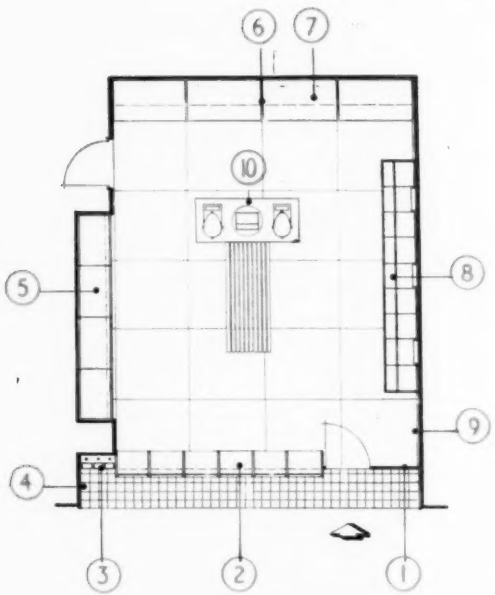
50G/RF.3

DESIGN FOR

NEW TYPE OF GREENGROCER'S SHOP

THE problem of protecting foodstuffs that are displayed and stored in shops is basically an architectural problem, which may be solved by good design and the use of appropriate materials. Here is one solution, which provides new standards of hygiene: a greengrocer's shop designed by Edward D. Mills, F.R.I.B.A.



Plan Greengrocer's shop.

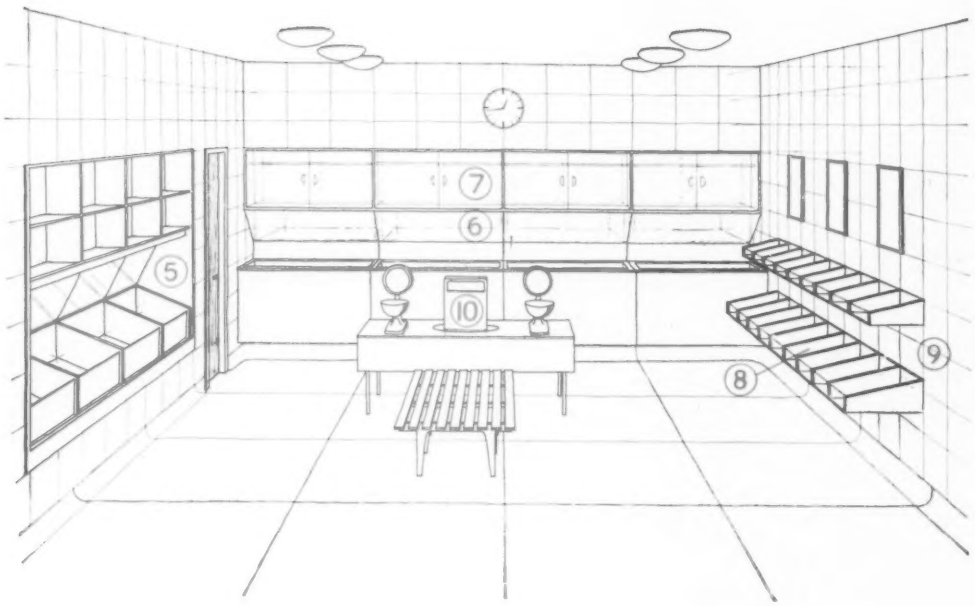
SCALE 1/8" = 1'-0"

Specification of Materials

1. **Entrance door and side light**
   Entrance door standard frameless "ARMOURPLATE" door with "ARMOURPLATE" side panel.
2. **Shop front**
   Hard wood display units glazed with "INSULIGHT" double glazing units to reduce condensation, and lined with mirror to increase display value.
3. **Shop front surround**
   "INSULIGHT" hollow glass blocks type P.B.3. light diffusing. Concealed lighting behind blocks for night illumination. Glazing over doors and display frame with Prismatic glass, glazed in hardwood frame to refract daylight into the shop.
4. **Reveals to shop front**
   Faced with black "VITROLITE" in standard Ashlar sizes.
5. **Vegetable bins**
   Constructed of hardwood with removable front panels in "VITROLITE". Mirror reflector behind at an angle to increase visibility. Shelves over for tinned goods.
6. **Frozen food storage cupboards for perishable foods, etc.**
   Faced with "VITROLITE" with mirror reflectors above.
7. **Special display cupboards** with frameless sliding polished plate glass doors.
8. **Fruit display**
   Hardwood trays cantilevered from the wall. Removable front edge in polished plate glass. Poster frames over with hardwood frames glazed with sheet glass.
9. All walls to shop lined with Primrose "VITROLITE" in standard Ashlar sizes.
10. Service point including bag rack, counter for scales, cash register, etc., with ½" rough cast glass top on timber sub-structure.

PROTECTION

WITH NEW STANDARDS OF HYGIENE



Above: Interior view of shop. *(See plan and specification on opposite page)*
Below: Perspective of Exterior.

Designed by Edward D. Mills, F.R.I.B.A.

Consult the Technical Sales and Service Department at St. Helens, Lancs., or Selwyn House, Cleveland Row, St. James's, London, S.W.1. Telephones: St. Helens 4001, Whitehall 5672-6.

"ARMOURPLATE" and "VITROLITE" are the registered trade marks of Pilkington Brothers Limited. "INSULIGHT" is the British registered trade mark of Pilkington Brothers Limited.

Supplies are available through the usual trade channels.

BRITISH GLASS PB

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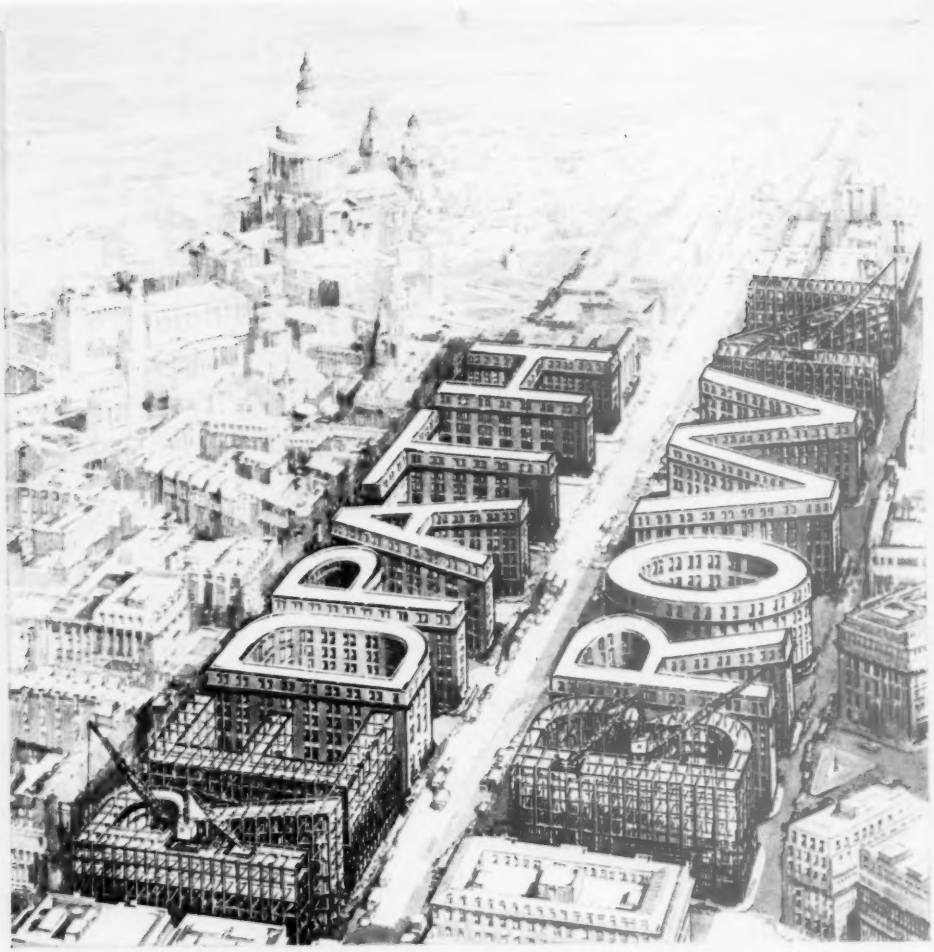

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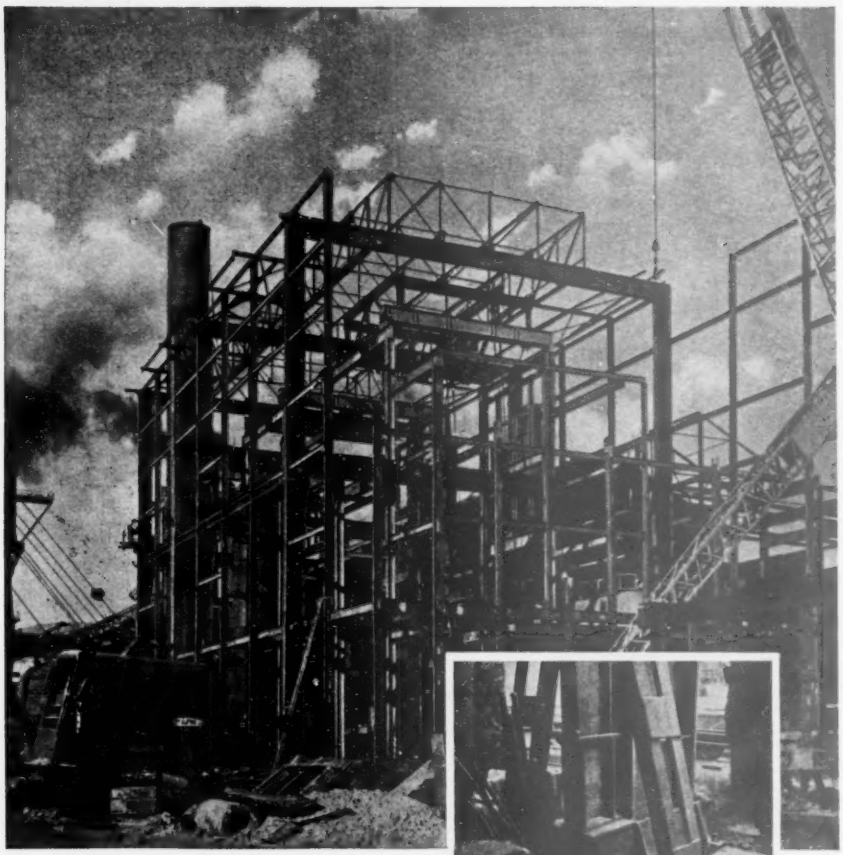
SHEFFIELD SOUTHAMPTON

STEELWORK



Boiler House Structure at the Margam works of the Steel Company of Wales Ltd.

Chartered Consulting Engineers:
W. S. Atkins & Partners

DAWNAYS LIMITED

BRIDGE AND STRUCTURAL ENGINEERS

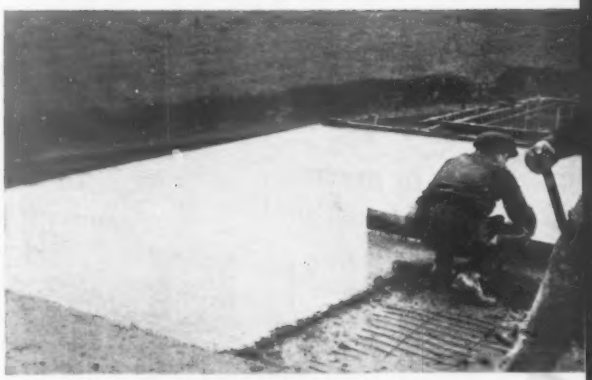
HEAD OFFICE: **STEELWORKS RD., LONDON, S.W.11** : Telephone **BATTERSEA 2525.**

King's Dock Works **SWANSEA 3105**	East Moors Works **CARDIFF 2557**	52 Victoria St., London, S.W.1 **VICTORIA 1541**	Bridge Rd. Works **WELWYN GDN. 240**	Thorp's Works **NORWICH**
2 Rockstone Place **SOUTHAMPTON 2474**	40 Park Road **PETERBOROUGH 4547**	155 Princes Avenue, HULL **HULL, CENTRAL 8161**	22 High Street **ROMFORD 2106**	7 The Close **NORWICH 23141**

Cables and Telegrams "**DAWNAYS, LONDON**"—Code Bentley's 2nd.

MARLITH

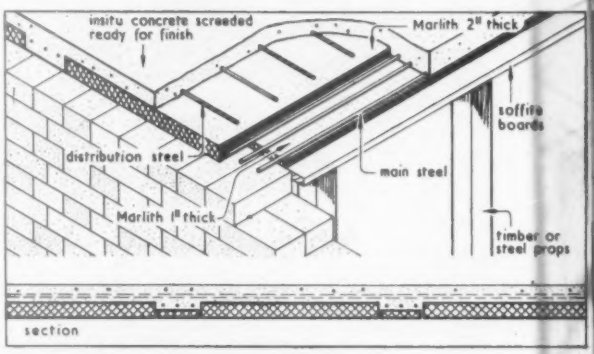
used as permanent shuttering
speeds up construction,
reduces costs, and provides
excellent thermal insulation



THE SHUTTERING for this flat in-situ reinforced concrete roof consisted of 2-inch MARLITH laid in temporary 2" x 2" x 3/16" steel tees supported by tubular steel scaffolding. The concrete was poured and the reinforcement applied in the normal way. When the concrete was set, the temporary steel tees and scaffolding were removed, leaving the underside of the MARLITH ready for plastering.

The drawing on right shows a similar construction in which timber props were used in place of tubular scaffolding, in conjunction with soffite boards and 1" thick MARLITH filling pieces.

The use of MARLITH in this way speeds up construction and reduces costs by eliminating the need for erecting and dismantling steel or timber shuttering and the application of insulation as a separate operation. It reduces the thermal transmittance "U" value of a 4½" flat concrete roof from 0·61 to 0·20, and the increased thermal insulation will maintain the temperature of the interior surface of the roof, thus minimising or preventing the formation of condensation.



MARLITH

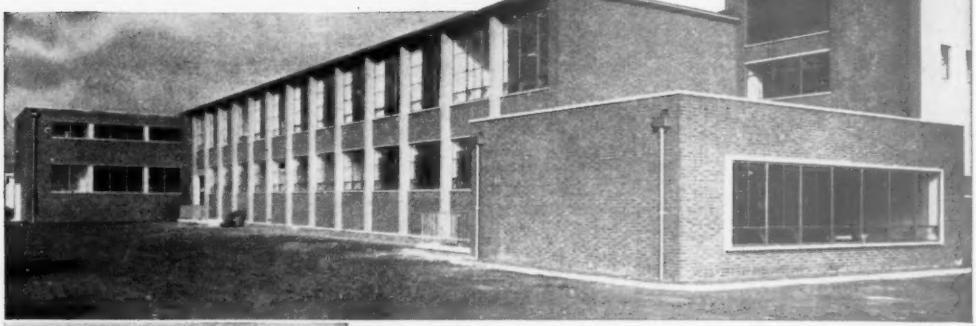
Wood Wool Building Slabs

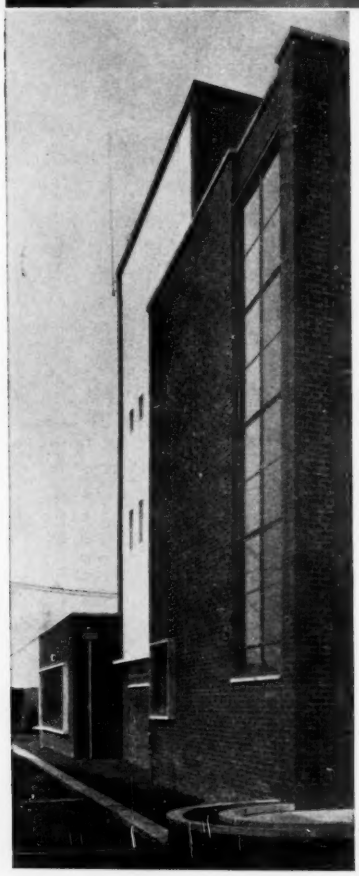
The Marley Tile Company Limited · Sevenoaks · Kent

THE PHOTOGRAPHS were taken at Whitby Junior and Infants School, and show: *below*, MARLITH slabs being placed in position in the temporary steel tees; *above*, concrete being levelled.
ARCHITECTS: John Keppie & Henderson & J. L. Gleave, Chartered Architects, 196 West Regent Street, Glasgow C2
CONTRACTORS: Messrs. Jaram & Son, 20A Gladstone Street, Scarborough.
AUTHORITY: North Riding Education Committee, Northallerton

What are these windows & doors made of ?

Aluminium alloy provides an answer to atmospheric corrosion at Beckton Gas Products Works





ATMOSPHERIC CORROSION at Beckton Gas Products Works set the Consulting Engineers of the new buildings many problems. Not least of these concerned the doors and windows. These had to be highly resistant to corrosion and at the same time strong enough to withstand the high winds blowing over the Thames marshes to which the Beckton buildings are exposed.

Aluminium alloy and intelligent workmanship were combined to supply the answer. All the windows in the Welfare and Canteen Block at Beckton are Williams & Williams purpose-made aluminium windows of specially extruded sections which are *electrically mitre-welded*.

To resist corrosion

Had these windows and doors been made in steel they would have been remarkable only as an example of an excellent architectural design correctly interpreted by the window manufacturer. But by specifying aluminium alloy, the Consulting Engineers obtained not only a faithful interpretation of their design, together with adequate strength and durability, but also a special resistance to the highly corrosive atmosphere associated with these works. In addition, the extruded sections give an air of sleekness and precision very much in keeping with the general character of the building.

The windows and doors were treated at Works by the Alocrome process to give good paint adhesion, and then primed and stoved. The finish, which was in pale blue cellulose, was applied at site. The effect of this high finish on the slim, precise aluminium alloy sections is most pleasing.

Additional ventilation

An impression of the window layout in this building is quickly gained from the photograph of the west elevation (above). Here, the windows are fitted with hopper ventilators and are glazed internally by means of aluminium beading. The building is air conditioned and the hopper ventilators are provided for extra ventilation in the hottest weather. The staircase window, 28 ft. high (left), is entirely free

CONSULTING ENGINEERS: *Brian Colquhoun & Partners.* CHIEF ARCHITECT: *A. H. Shearing, A.R.I.B.A.*
CONTRACTORS: *Taylor Woodrow Construction Ltd.* WINDOWS AND DOORS: *Williams and Williams, Ltd.*

standing and its appearance is enhanced by the clear razor-edged lines of the extruded aluminium sections.

The Aluminium Alloy double action swing doors in the main entrances to the building (above right) and the entrance lobbies (centre right) were specially designed by Williams and Williams to fulfil the Consulting Engineers' requirements. The leaves were constructed from hollow extrusions produced expressly for this particular job.

Extrusion gives freedom of design

This is an excellent example of the freedom of design which the use of aluminium gives to the architect, as special extrusions can be made available without undue delay and at reasonable cost.

The canteen is well lighted by its series of sidewall windows, and there are also anodised aluminium lay lights made by Williams and Williams Limited.

Below is a view of the east elevation, showing the canteen and locker room windows, and swing doors. These windows and doors are in conformity with good modern practice, and in order to resist the special corrosive conditions at the Beckton Gas Products Works, they are in extruded aluminium sections by

Williams & Williams Ltd

Metal Windows and Doors

RELIANCE WORKS · CHESTER

"Gales in sea-area ICELAND"

But these are McP Shutters

Atlantic gales and Arctic conditions mean that special care must be taken when building in Iceland.

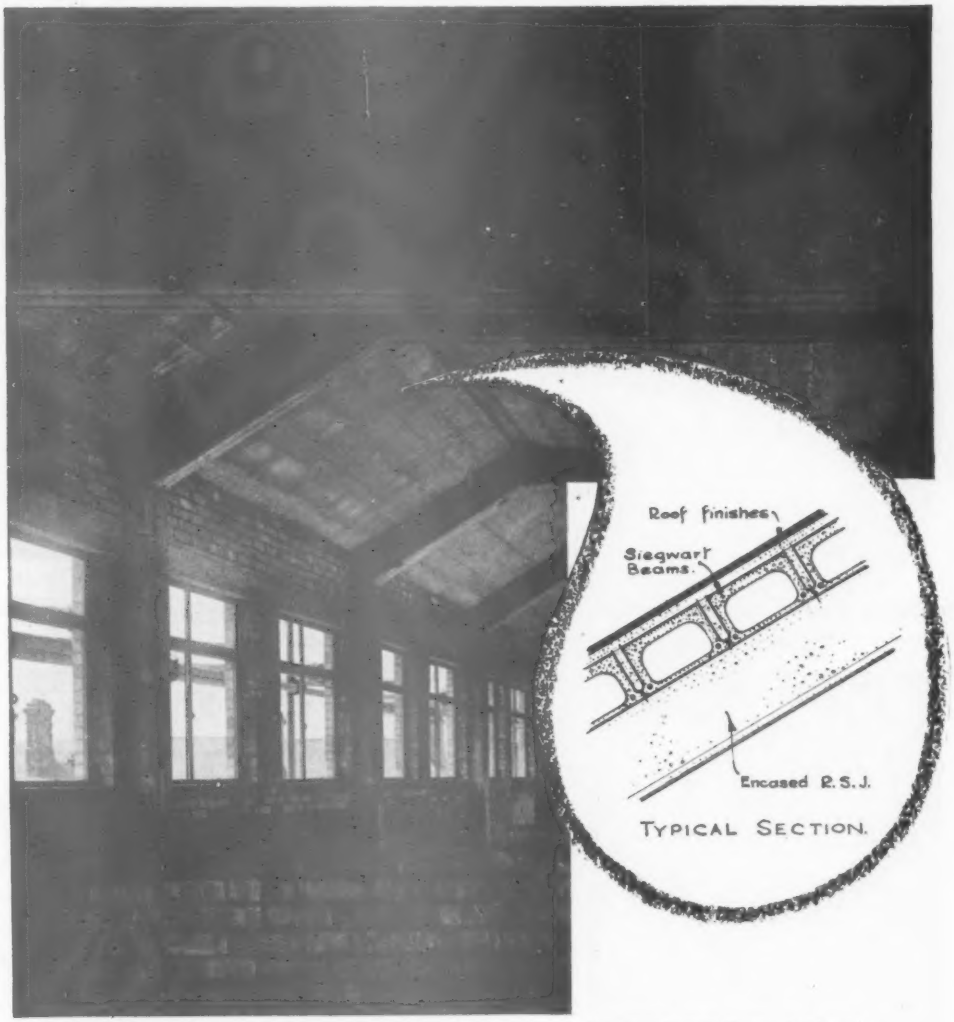
And especially so when the site of a building required to house the gear of Reykjavik fishermen —their nets can be seen drying on the roof of the finished sheds—is perched on top of an exposed sea-wall built of rock and earth to protect the harbour from wind and waves.

The Harbour Adminstration found it necessary to build the walls and the roof of solid concrete and to set the walls at an angle in order to withstand the force of the gales.

But there was no problem when it came to installing shutters in the building. The installation of Steel Rolling Shutters was the obvious answer, and some of the fifteen Mather & Platt Shutters which now successfully withstand all the blasts of a Northern winter are seen above.

Steel Rolling Shutters by Mather & Platt Ltd.

PARK WORKS
MANCHESTER 10



UNIVERSITY COLLEGE, LEICESTER *Architects : Pick, Everard, Keay & Gimson*

SIEGWART
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Siegwart Precast Floors, Roofs and Sloping Roofs have been supplied and fixed in the new buildings for the South Wing and the Biological Block.

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S/2/51

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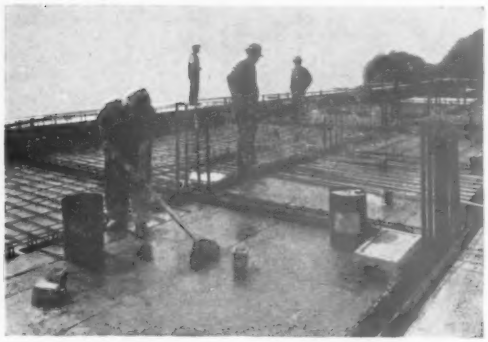
LET THERE BE NO DOUBT ABOUT REDALON



REDALON Liquid Cement Retarder has been specified by Architects and Engineers, and used by Contractors voluntarily since 1927, but even so there are still those who would like to use Redalon, because they have heard it is good, but wonder if it is really safe. The answer is, of course, yes. The following points will, I hope, remove all doubts.

WHY USE REDALON?

It provides an efficient suction-key over the whole surface, whereas hacking only gives a key at the best over 33⅓ per cent. of the area and weakens the concrete.

DOES IT ATTACK THE REINFORCING?

If all the Redalon painted on the shuttering, even on a 4 in. wall, treated both sides, were mixed up in the concrete, the final strength of the concrete would not be reduced.

WILL IT PENETRATE TOO FAR?

The maximum penetration of Redalon when painted on the shuttering is ⅛ in. to ¼ in. It only retards the setting. It does not kill the cement.

DOES IT ROT THE CONCRETE?

Redalon Liquid has no deleterious effect on steel. Splashes of Redalon, which might get on to the reinforcing, would not affect the adhesion.

WHAT ABOUT THE RED COLOURING?

It is a water solvent colour released by the lime in the cement. It has no retarding properties. Concrete made with the coloured water is the same strength as with main water.

IS IT ECONOMICAL?

It is cheaper to use Redalon than to hack. Furthermore the shuttering is easier to strike. There is no suction, and the shuttering does not require scraping.

WHAT IS REDALON?

REDALON Liquid is a series of chemicals in Varnish form used to retard the surface cement skin allowing it to be brushed off when striking the shuttering thus providing a natural key.

HOW IS IT APPLIED?

By brushing on to the wood or steel shuttering immediately or months before pouring the concrete.

* * *

REMEMBER!

No Redalon Bonded plaster has ever fallen—even when subject to bomb damage.

Cecil Kahn

Amongst typical contracts upon which Redalon has been used, are:

Daily Express, Fleet Street
Middlesex County Council Schools
Marble Arch Subway
Midland Bank Head Office
Telephone Exchanges
Thames House, Millbank
Pimlico Flats
Subways, London Airport
Housing Estate, Liverpool
L.T.E. Headquarters, Broadway, S.W.1

THE ADAMITE COMPANY LTD., Manfield House, Strand, W.C.2. Tem. 6233/6

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THE HOUSING NEEDS OF OLD PEOPLE

SIR EDWARD BLIGH, at the Discussion Meeting at the R.I.B.A. last week, said that there were about five million old people in this country to-day, and that the great majority of them lived in the ordinary way in the community, and wished to go on doing so. It is estimated that in another ten years the number will have risen to eight million. The special needs of old people in housing therefore need careful study, and a very useful contribution to this problem was made at the R.I.B.A. meeting last Friday.

It is invaluable at this stage to collect records of existing schemes as in the small exhibition mounted for this meeting, and by comparing notes on their relative success, to work towards the best solution.

The three stages of Man in old age were defined as: (1) Still able-bodied; (2) active, but needing assistance; (3) increasingly infirm, but not needing complete hospitalisation. Ideally, each neighbourhood should make provision for their old people so that they may progress gradually from one type of accommodation to another, as they pass through those three stages.

In the Greenbelt scheme in the U.S.A. much the same idea in terms of family life was followed.

The problem of housing old people is part of the greater problem of housing generally, and is summed up in the words of Mrs. Hill at the R.I.B.A. meeting. A young man recently out of the R.A.F. said to her, "I have been very fortunate in getting a bungalow with two bed-rooms, but I have in it now not only my wife and two children, but also my mother, my grandmother and my aunt. If you could remove my grandmother, I think we could manage."

Mrs. Hill advocated the conversion of old houses of fairly good construction, for, she said, older people generally were content with simple dwellings provided they had the necessary conveniences, and their happiness and comfort depended very much more on those who were running the homes than on the arrangement of the homes.

Mr. Llewellyn Smith, who has considerable experience in designing old people's dwellings, said that the minimum cost of housing old people in new bed-sitting-rooms was about £1,000 per head, whereas in the case of three small conversion schemes carried out in 1947-1949 the average inclusive cost worked out at £406 per head (brought up-to-date by adding 10 per cent., £445). The cost of providing central heating and hot water would add another £53 per head. Mr. Llewellyn Smith considered that open fires involved the carrying and filling of coal scuttles, and the work of laying and attending to the fire which only partially warmed the room; he therefore preferred central heating for old people's dwellings.

The Borough Surveyor of Wembley, Mr. C. W. Steedman, on the other hand, considered that old people did not want central heating; they liked open grates which supplied all their needs and were simpler to look after. He said that in his borough bungalows for old people were being built at a cost of just over £400 per person, plus a further £80 for land, roads and sewers, and that these bungalows were let at 8/- a week.

Perhaps now is the time for a thorough inquiry by housing managers or other qualified people into the types of houses, flats, aspect and room arrangements that the tenants prefer, so that, subject to the limiting factors of cost, materials, etc., future building can eschew those forms which are generally disliked.

Much of the housing of recent years has been the expression in building of a problem—a diagram of the density and poverty of a particular neighbourhood—rather than the solution of that problem.

In their recent memorandum on Housing submitted to Mr. Dalton, the Housing Centre gave the number of houses over 50 years old as 6¼ million, and argued that these houses should be maintained to prevent them deteriorating into slums.

The London County Council has given a lead in converting large houses into dwellings for old people,

and the R.I.B.A. meeting has suggested this among other forms. It only remains to spread this information as widely as possible so that overcrowding like that in the case of the unfortunate R.A.F. man is relieved as soon as possible. Even so the problem will need the help of emigration and the limitation of population-growth to prevent it becoming endemic. There is no general panacea, only by passing on information and using all possible means to combat the housing shortage can we hope to house people in conditions of human dignity.

Up to June 1950 local authorities in England and Wales returned the following figures for one and two bedroom dwellings for old people:—One bedroom: Tenders approved; 36,272. *Completed* 21,741. *Two Bedroom: Tenders approved;* 116,401. *Completed* 66,834.

EVENTS AND COMMENTS

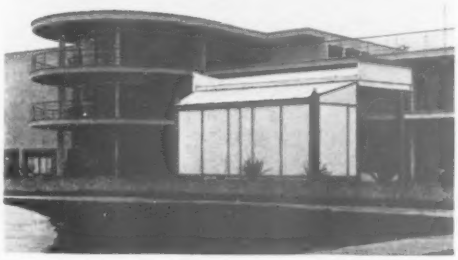
A.A. RECEPTION

IT is a pity that spare decibels cannot be captured and turned to some useful purpose, for there were plenty about at the A.A. reception last week. The crowd was immense and the atmosphere extremely gay. Guests were received in the library by the President, Mr. S. E. T. Cusdin, and Mrs. Cusdin, to the music of an R.A.F. string band, which I fear did not get much of a hearing and included on its strength one of the most disreputable looking double basses I have ever seen — not the player but the instrument.

Once received, guests had a wide choice of entertainment starting with an exhibition of drawings of ducks by Peter Shepheard. I have always known him as a good draughtsman, but had never realised that he could do this sort of thing so exquisitely. The drawings are, I understand, for a King Penguin, and include studies of duck skins and details. Peter Shepheard told me that the Natural History Museum stores large numbers of specimens unstuffed. He likes them because they are so much easier to draw; not that I should have thought that technical difficulties would have worried him much. Next on the list was a quiz, not just a simple one of guessing what or who, but one which required a good deal of thought before beginning work. I am afraid that few people were in the mood for work and the organisers were hardly repaid for the work they had done on its preparation. In the same room under a glass case no more than nine inches high was what the programme described as a "remarkably small stuffed terrier." This dog was exhibited at the Great Exhibition of 1851 and now belongs to the Hon. Humphrey Pakington.

On upper floors there were exhibitions of the work of A.A. members in South Africa and Circusiana, lent by Mr. Anthony Hippisley Coxe. For those who like shuffling round in a scrum with a lovely girl to hold, there was a band in the basement where the very pretty paper decorations continuously remind me of Eric Bird and "Fire in Buildings." The customary vast members' bar was arranged in the ground floor studio, which was decorated with a frieze of travel posters. The noise here was terrific.

From time to time there was an excellent cabaret in the library and a one-act play by the A.A. Dramatic Society in one of the upper studios. To round the thing off official guests were entertained in the Council Room and the Principal was At Home in his room. A thoroughly gay evening, enjoyed, I guess, by everyone.



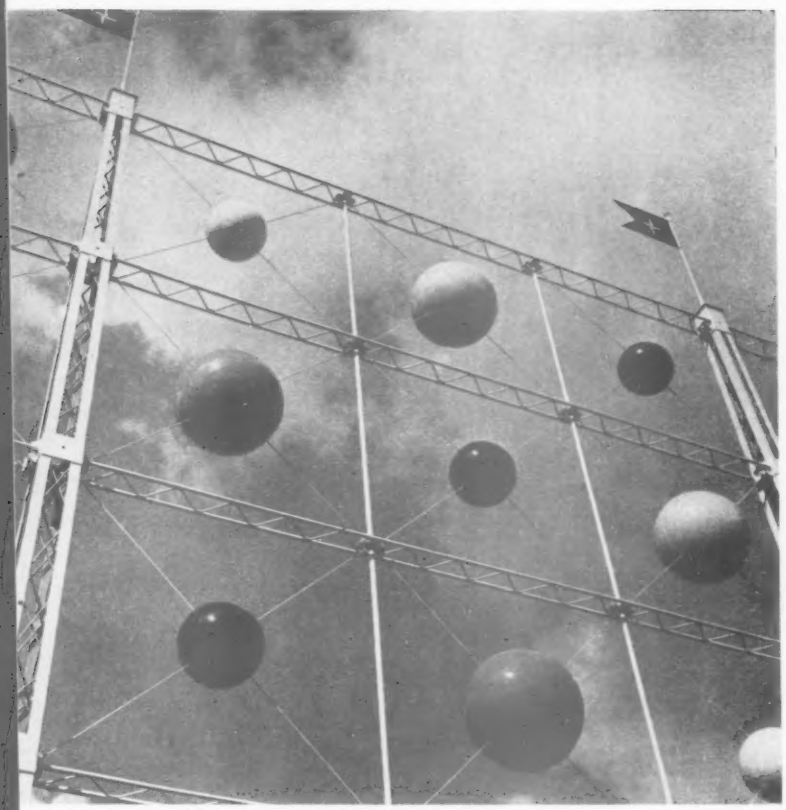
A recent picture of the back of the bandstand in front of the Bexhill Pavilion. See comment below.

BEAUTIFUL BANDSTAND AT BEXHILL

MY picture shows a bandstand, erected I am told some eighteen months ago, in front of the De La Warr Pavilion at Bexhill. It is painted cream and green, and seems to me to owe a lot to early Southern Railway Moderne. Whatever must foreign architects visiting our modern buildings think? Perhaps as a penance the band has to play a compulsory quota of Mendelssohn. Pull it down!

LITTLE TUBES IN THE BACK GARDEN

THIS has nothing to do with people who live over the Bakerloo. The Electrical Research Association is in the news again. Experiments are going on, according to a press report, with small tubes buried in the garden. The idea is to heat the house by using heat drawn from the soil. The tubes contain a liquid with a very low boiling point. The natural heat of the ground boils the liquid, which is then passed through some sort of compressor to raise the temperature for house-heating purposes. This sounds like a variation of the heat pump idea. When the system is perfected running costs are expected to be small, but installation is likely to be expensive. I believe that domestic heat pump installations can be bought in America, and for all I know in Dundee as well.



Detail and general view of the Festival Site screen along the L.C.C. by-pass designed by Edward D. Mills, F.R.I.B.A., F.S.A. Fibrous plaster globes painted in bright colours are strung from light steel lattice pylons.

COVENTRY ARCHITECTS' EXHIBITION

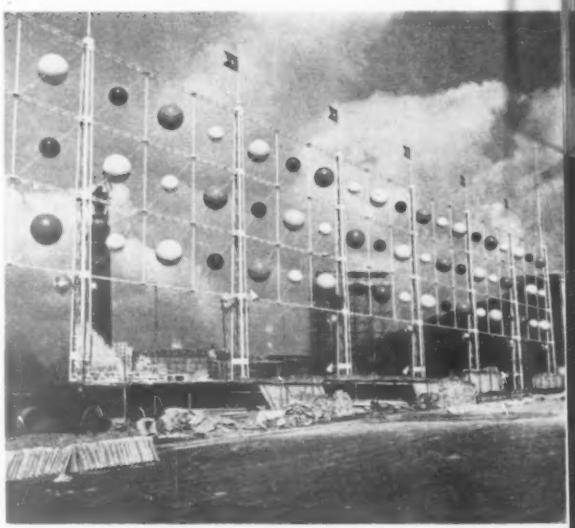
THE Coventry Society of Architects announces that it is holding an exhibition of members' work from June 2 to June 30. The exhibition will be entitled "Contemporary Architecture" and is being arranged at the Herbert Gallery by the Society in conjunction with the Arts Council of Great Britain. I think I am right in saying that this is the first exhibition of architecture in which the Arts Council has been interested. It is a most welcome departure.

LYONS TEA SHOP

THE narrow fluted plastic sheeting to which I referred a fortnight ago is one of the latest Warerite products and the table-tops are Warerite wood veneers. The designers of the tea-shop were Richard Lonsdale Hands and Associates, working in conjunction with Lyons' engineering and construction staff.

FESTIVAL NEWS

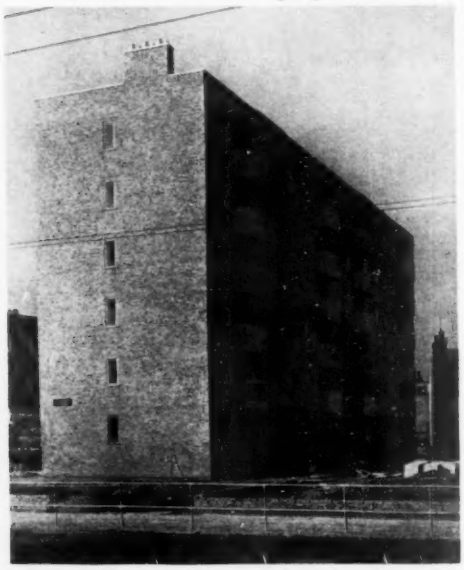
SKYLON: Felix Samuely, who did the calculations which enabled the Skylon to be built, tells me that, far from having to increase the original number of guys, they have been able to eliminate some. Only three remain. The other day, in very squally conditions, Mr. R. Freeman, of Freeman Cox & Partners, the Festival



St. Pancras Station ; Entrance from Pancras Road before and after treatment. See comment below.

engineers, climbed to the top and reported that the structure was as steady as a rock.

HYDE PARK: The Royal Society of Arts, with the Festival authorities, has been given permission to mark the site of the Great Exhibition with flags on masts to be supplied by Messrs. John Edgington and Messrs. Benjamin Edgington respectively. Edgingtons were responsible for them at the original exhibition.



Nearing completion : Block of flats designed by the Valuers' Department, L.C.C. along the East India Dock Road forming part of the Lansbury Neighbourhood F.O.B. Exhibition.

PUBLICITY: The flood gates are being gradually opened but I have to confess that as yet I have not been swept away by the Festival spirit. I have not even begun to wonder whether I should go to this or that. To do the thing properly one would need a month's extra holiday and a lot of money. When the L.C.C. has finished shuffling conductors for the concerts and has sorted out the tickets, some of which, I understand, will have to be returned, the concerts will be upon us. Have you noticed the symbol for the Festival Hall now being used in press advertising? A quaint little object, half lyre, half chalice.

OH WHAT A BEAUTIFUL SIGN.

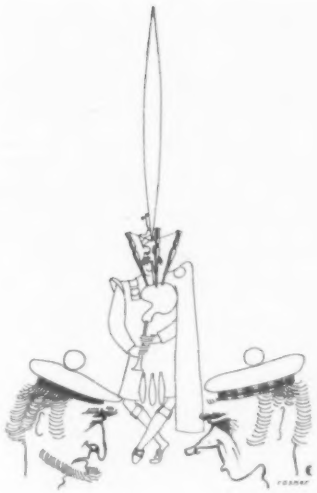
THE Regional Public Relations and Publicity Officer of B.R. (M.) has been beautifying St. Pancras Station. He has certainly tidied up the posters on the concourse. It would have been nicer if he could have got rid of them altogether, but I imagine that there is little prospect of this until the railways can be made to pay in their primary role of carrying passengers and goods from *A* to *B*. The station has also been completely fitted out with signs "in accordance with British Railways principles." They are legible but uninteresting. Are we to be condemned to sans serif lettering on every railway station, train, lorry, truck and poster in the country? Have the railways not noticed that there are other types of lettering better suited to their purpose already in use, on their trains and buildings? I agree that the work done at St. Pancras will help rather than hinder the searcher after train information, but it is all desperately uninspired.

Are these signs part of the overall treatment for the improvement of the interior of St. Pancras? Or is the problem being dealt with piecemeal? My pictures show a "before and after" near one of the entrances of the station. Which would you rather have? Does the fact that notices are the responsibility of the Public Relations and Publicity Officer mean that the Architect's Department does not control the appearance of the inside of our stations?

ARCHITECTURE AND PUBLIC LIBRARIES

"YOUR Business," the Birmingham Corporation monthly news sheet, includes in its April issue a column on Popular Architecture and a list of fifteen books which cover a large part of British architectural development. The introductory remarks to the list are perhaps a trifle indigestible as popular architecture, but the idea of drawing attention to books on architecture available at public libraries is excellent.

ABNER



"MacGregor is making an exhibition of himself" ☛

NEWS OF THE WEEK

Peak District National Park

The Minister of Local Government and Planning has confirmed the Designation Order for the Peak District National Park substantially as it was made by the National Parks Commission. He has excluded two small areas of land in Macclesfield Rural District in the north-west corner of the Park.

In a letter giving his decision, Mr. Dalton says he cannot accept objections based on the contention that the boundary of the Park should be made to follow those of local authority areas, though this would be convenient. He agrees, however, with the Commission that the first aim must be to include in the Park the most beautiful countryside and to make the boundaries easily recognisable.

In answering objections from farmers, the Minister's letter says it should be understood that the designation of a Park does not in itself give the public any rights of access which did not exist before. "The success of the National Park movement," the letter says, "will largely depend on the mutual accommodation of those who live and work in the Park and those who visit it . . . It will be for the responsible authorities to ensure that the public clearly understand and respect the needs of the farmers and the Minister is certain that this can be done."

Festival of Britain Courses

The British Council has arranged a series of 11 six-day Festival of Britain courses to be held in London between June and September. They are designed to illustrate or supplement the Festival programme for overseas visitors with special interests.

Subjects are *Contemporary British Music* (June 3-9), *The Contemporary Theatre* (June 10-16), *Characteristic Styles of British Architecture* (June 24-30), *Life in London* (July 1-7 and August 26 - September 1), *Science in Britain* (July 8-14), *The Place of the Commonwealth in the Modern World* (July 15-21), *Education in England Today* (July 22-28), *The Government of Britain* (July 29 - August 4), *The Film in Britain* (August 12-18), and *Industrial Design* (August 19-25).

Each will consist of a series of nine or ten morning lectures given by men and women distinguished in their professions.

The course on Architecture has been designed for those who are interested in the traditions and present development of British architecture.

Lectures will be given by leading experts and will include such subjects as: *Medieval Architecture; Churches and Cathedrals; Elizabethan Architecture; The Work and Influence of Christopher Wren; 18th Century Architecture; Victorian and Edwardian Influences; Architecture Today; Town Planning; Domestic Architecture; Future Trends in Architecture.*

Lectures will be illustrated, where appropriate, with slides and films of interesting examples of various styles.

Residential members of the course will be taken on a conducted tour of the Festival exhibition of architecture at Poplar.

A visit will also be arranged to the exhibition of "100 Years of British Architecture" at the R.I.B.A. and advice will be given on visits to other buildings of outstanding architectural interest in the London area.

One hundred places will be available on each course. Twenty-five will be filled by residents, for whom two or three afternoon excursions or evening visits—to concerts or theatres, for example—will be arranged. The remaining seventy-five places are non-residential and the £2 fee covers lectures only. The inclusive fee for lectures, visits and accommodation is £12 10s. Although the courses are primarily arranged for visitors from overseas, who will be given priority, a small number of places may also be available to British applicants.

★

The National Association of Chambers of Commerce is to set up a special committee to inquire into the problem of housing.

★

The President of the Board of Trade has re-appointed Dr. R. S. Edwards, Ph.D., Chairman of the Council of Industrial Design.

★

Mr. John H. Barker, an architect of the staff of the West Riding County Council, is emigrating with his family to Auckland, New Zealand, next month, to take up an appointment there as architect on the permanent staff of the New Zealand Ministry of Works.

A.A. Scholarships in Architecture

The Council of the Architectural Association announce the award of the following Scholarships in Architecture at the Architectural Association School of Architecture:

The "Leverhulme" Scholarship (value £1,000): Mr. B. Dewhurst, of St. Agnes, Cornwall. (Durham School and Plymouth School of Art).

The "Minter" Open Entrance Scholarship (value £100): Mr. C. R. Lamb, of Berkhamsted, Herts. (Berkhamsted School).

The "Sir Walter Lawrence" Open Entrance Scholarship (value £100): Mr. P. D. Pank, of Colchester, Essex. (Wellington College).

The Metal Window Scholarship (value £75) presented by The British Metal Window Manufacturers Association, Ltd.: Mr. M. H. V. Jones, of West Worthing, Sussex. (Highgate School).

The Natural Asphalte Council Scholarship (value £50) presented by the Natural Asphalte Mine-Owners and Manufacturers Council: Mr. A. J. Ballantine of Beckenham, Kent. (St. Dunstan's College, S.E.6).

York Summer School

A Summer School of Architectural and Historical Study will be held in York from August 11-25 under the auspices of York Civic Trust in association with the York and East Yorkshire Architectural Society and the West Yorkshire Society of Architects. The school will be open to students in recognised Schools of Architecture, and others on the recommendation of their tutors. The fee is £4, and application for admission form should be made to the Secretary, Keith Thomson Esq., York Civic Trust (Academic Development Committee), 6 High Petergate, York, before May 26.

Lecturers include Maurice Beresford; J. Brandon Jones; John Charlton; John H. Harvey; The Dean of York; Prof. Ian A. Richmond; Prof. Gordon Stephenson; John Summerson; Prof. Geoffrey Webb. The Director of Studies is Dr. William A. Singleton.

* * *

A general increase of 25 per cent. on all course fees, with the exception of town and country planning fees which remain unchanged, will come into operation in the Edinburgh College of Art next session. The fee for a full-time architecture course will be £30.

Results of Poster Competition

Results of the Morris of Glasgow sponsored poster competition have been announced. Mr. Neil Morris invited students from Dundee, Glasgow, Edinburgh, and Aberdeen art schools to participate in a competition to promote and encourage the use of well designed furniture.

Prizes were awarded to: *First* (£20) John Stewart, Glasgow School of Art; *Second* (£15) Mary Bruce, Edinburgh College of Art; *Third* (£10) John Kilgour, Glasgow School of Art.

The judges, appointed by the Scottish Committee of the Council of Industrial Design, were: Mr. Basil Spence, O.B.E., F.R.I.B.A.; Mr. Robert Nicholson, designer of the exhibition "Living Tradition," to be on view in the Royal Scottish Museum during the Festival of Britain; and Mr. F. P. Restall, of the Heriot-Watt College, Edinburgh. The judges said that the standard of entries was high both in design and execution.

COMING EVENTS

The Ecclesiological Society
- April 23, at 7 p.m., at the Archbishop Davidson Institute, Lambeth Road, S.E.1. "More Notes on Italian Mosaics." Speaker: E. A. Remnant.

The Housing Centre
- April 24, 6 p.m. "Residential Qualifications for Housing." Speaker: Ernest E. Fletcher.

The Architectural Association
- April 25, at 8 p.m. Ordinary General Meeting. "New Towns in England and New England." Speaker: Prof. W. G. Holford.

The Institution of Structural Engineers
- April 26, at 5.55 p.m. "Comparative Tests on various types of bars as reinforcement of Concrete Beams." Speaker: Dr. K. Hajnal-Konji.

Students' Planning Group
- April 26, at 6.15 p.m. "His landscape work for the South Bank Festival Site." Speaker: Peter Shepheard, B.Arch., A.R.I.B.A., A.M.T.P.I., A.I.L.A.

CORRESPONDENCE

Non-Traditional Housing

To the Editor of A. & B.N.

Sir,—While there is much of great interest in the report of the Scottish Housing Advisory Committee on "Design and Workmanship of Non-Traditional Houses" there is also much that has been overlooked or ignored.

Outstanding among the latter is the fact that, with one solitary exception, none of the so-called "non-traditional" houses is completely factory-made. In fact, during the past two or three years many builders have reverted more and more to the use of bricks in the construction of this type of house.

Non-traditional houses have many merits in their own right—which were recognised by the Scottish Housing Advisory Committee—and they have also a number of points in their favour which should warrant a greater concentration on this type of house at the present time when both time and materials are short. The true non-traditional house, since it is completely factory-made, can be in production all the year round and the flow of production only interrupted by the most violent weather conditions. Against this we must contrast the fact that with traditional brick houses and also those which are called non-traditional but actually are made largely of bricks, weather conditions invariably hold up construction for about three months in every year. This means a loss of 25 years in a century and with wars and their aftermaths holding up house building for another 25 years per century the construction of houses is only possible by traditional methods 50 years in every hundred! And that is obviously not good enough.

Again there is the fact that the amount of coal required to produce a given amount of concrete, etc., for the walls of a true non-traditional house is only about half that required to make the bricks to build an equivalent area of walling. With the nation's fuel resources as low as they are to-day, this is a point of vital importance.

The request made a short time ago by the Department of Health for Scotland that local authorities should build at least half of their year's allocation of houses by non-traditional methods was obviously made to take realistically the fullest possible advantage of the economies and speed which *true* non-traditional houses alone can offer. Otherwise the whole thing does not make sense.

I am, etc.,

ROBERT G. TARRAN.

Architecture with a capital A

To the Editor of A. & B.N.

Sir,—I was most interested to see from Abner (February 23, 1951) that Professor Gordon Brown fresh from Hong Kong, reports that his students there consider the English architectural papers to be provincial.

I have long been of the same opinion.

It is probable that because architects in the United Kingdom have so long had little to do other than public housing, schools, factories and the like; they have so long been thinking up ways to eke out the timber ration, cope with the shortage of steel, cement, money, etc., and wade through the surplus of forms and the delays of procedure, that they have persuaded themselves that this is Architecture—with the capital A.

The Editors, in order to sell their papers, discuss and illustrate mainly the sort of work the bulk of their readers are engaged upon, but I can assure you that, at least to the overseas reader, the constant illustration and description of sub-economic housing, flats, factories and other such becomes very wearisome.

Why not, Mr. Editor, let architects in the U.K. see some of the Architecture—not buildings—being done in the outer world.

I am, etc.,

Nairobi. G. NORBURN.

IN PARLIAMENT

Timber Prices

MR. BOTTOMLEY, Secretary for Overseas Trade, answered questiohs put by Mr. Harrison to the President of the Board of Trade about increases in timber prices since the partial relaxation of control. He stated that since the statutory maximum prices ruling up to February 28 this year were fixed in April, 1950, overseas softwood prices, like those of most other raw materials, had risen fast, and in many cases freight rates had shown large increases. Timber Control was therefore selling below cost during the period preceding the revocation of the Imported Softwood Prices Order, 1950, as amended on March 1, 1951. Prices were now necessarily related to the current costs of public and private buyers alike, and it was too early to say at what level they were likely to settle down in the new conditions. There was, however, no evidence that any part of the increase in current softwood prices was attributable to the measure of private import which is now permitted.

The President received from representatives of the softwood timber trade assurances that their selling prices would not contain a higher profit margin that was reasonable in present market conditions. The Timber Trade Federation had also agreed, at his suggestion, to set up a special committee, including representatives of the major consuming interests, to deal with any price and distribution problems that may arise. (Apr. 12.)

Current Imports

Mr. Bottomley stated in answer to Mr. Nabarro that he could not give an exact forecast of imports in 1951. Imports by Timber Control and by private trade would probably represent about two-thirds and one-third respectively of our total imports, though the actual proportion would depend on contracts that might yet be made and the fulfilment of contracts already made both by Timber Control and private traders. The rate of licensing of softwood in the latter part of the year had not yet been determined, but supplies should suffice to meet essential requirements for current consumption.

When asked if he could hold out any hope that by the end of 1951 stocks would equal the one million standards held in 1939, Mr. Bottomley said that in 1951 the timber position would certainly be better than last year if private traders would buy all they could in Scandinavia. The Government were buying all they could in North America at reasonable prices, and were not losing sight of the fact that additional supplies could be got in Russia. (Apr. 12.)

Steel Shortages

Mr. Bossom asked the Minister of Supply if he was aware of the delays being experienced by builders in obtaining steel for essential and approved buildings; and if he would take steps to relieve this situation. **Mr. John Freeman**, the Parliamentary Secretary, replied that the Government were examining possible arrangements for dealing with shortages of steel for essential purposes. (Apr. 10.)

Housing Grants

Mr. Dalton, Minister of Local Government and Planning, informed Mr. Bossom that the amounts set aside in the current financial year to be used as subsidy or Government contribution for local government or other housing were £49,568,500 for England and Wales and £10,717,000 for Scotland. (Apr. 10.)

Building Materials Fund

Mr. Marples asked the Chancellor of the Exchequer when he proposed to close the Building Materials and Housing Fund under Clause 2 (4) of the Building Materials and Housing Act, 1945.

Mr. Douglas Jay, the Financial Secretary, stated that the fund would be closed as soon as all outstanding accounts had been settled. Meanwhile no further commitments were being entered into. (Apr. 10.)

Mobile Labour Force

It was suggested to the Minister of Works by Lieut.-Col. Lipton that in view of the needs of the defence programme he might reconsider his decision to disband the Mobile Labour Force. **Mr. Stokes** stated that as at present advised he saw no need to reconsider the decision that the Mobile Labour Force should not undertake any further commitments. (Apr. 10.)

Stone and Aluminium

The report on the survey of the Scottish Stone Building industry, carried out in 1949-1950 by the Building Operations Research Unit of the Department of Scientific and Industrial Research, is still in course of preparation. The question of publication will be considered in conjunction with the Scottish Council (Development and Industry) in due course. (Under Secretary, Home Office, Apr. 16.)

I am expecting a report from the Building Research Station shortly on the Dorran aluminium house. (Minister of Local Government and Planning, Apr. 16.)

People in New Towns

The Minister of Town and Country Planning is considering the whole question of populating the new towns. Mr. Gibson, in a question, proposed that the Minister should consider setting up a small joint committee of the borough councils in the Greater London area and the new town corporations to compile a list of persons willing to move out to new towns, and to administer the placing of applicants from these lists. **Mr. Dalton** said that he would bear the suggestion in mind. (Apr. 10.)

* * *

Law Report

Mr. Amnon Vivien Pilley, architect, of Hill Road, St. John's Wood, London, N.W., was plaintiff in an action which concluded in the King's Bench Division on Thursday, April 12, before Mr. Justice Lloyd-Jacob. He sued Mr. Jacob Myer Isaacs, of Grosvenor Street, Westminster, for £130, the balance of fees he alleged to be due to him for services rendered in connection with the conversion of No. 69 Marlborough Place, London, N.W.

The defence was a denial that Mr. Isaacs was indebted to plaintiff. He had paid Mr. Pilley £299 15s., which was more than he was entitled to receive. Defendant counter-claimed for £279 15s. or any sum found to be due to him.

Mr. H. G. Garland, who appeared for plaintiff, said the history of the case started early in 1946. Mr. Pilley made the acquaintance of a continental architect named Balla, who was associated with Mr. Isaacs in converting a large number of houses in the St. John's Wood area. Mr. Balla suggested that plaintiff should do the architectural work in connection with the house in Marlborough Place and allow him (Balla) a percentage of the fees. Plaintiff did the work of survey, negotiated the plans with freeholders and the war damage claim. Mr. Isaacs, however, had not paid for the whole of the services rendered.

After evidence by Mr. Pilley, Mr. Isaacs said there was never any contract between plaintiff and himself with regard to the remuneration for the conversion of the property.

Mr. Justice Lloyd-Jacob, giving judgment, said there was no question that Mr. Pilley did the work and the only question was the propriety of the charges. In his lordship's view they were not only reasonable but generous and no one could say that plaintiff took on the work on a speculative basis. He commenced these duties on the property at the instance of a man named Balla, who was associated with defendant and another man in acquiring properties in St. John's Wood and converting them. Any profit was divided equally between them.

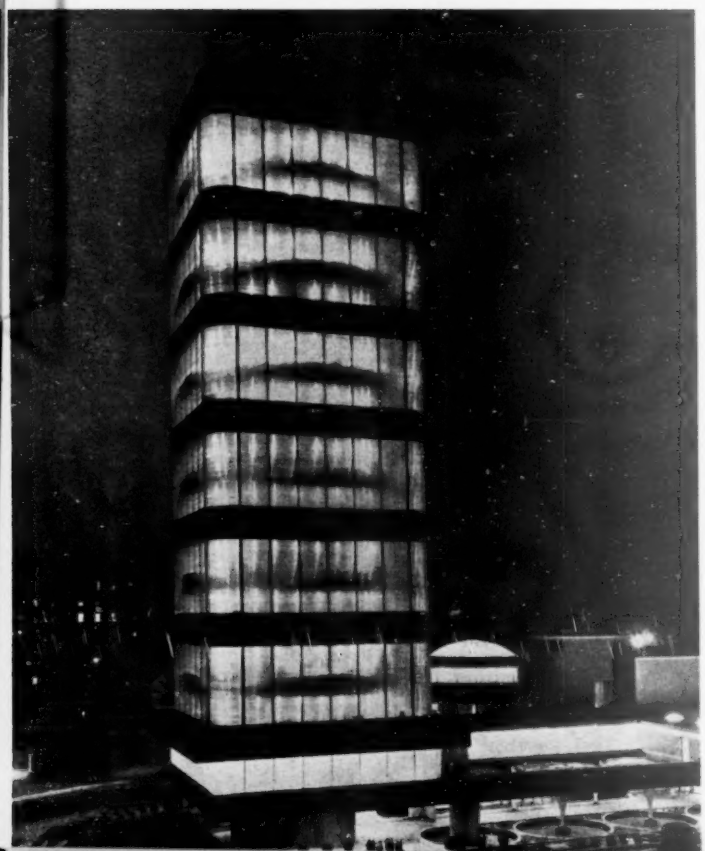
Mr. Justice Lloyd-Jacob said he had no doubt that Balla arranged with Mr. Pilley for the work to be done pursuant to an agreement with Mr. Isaacs.

The evidence had satisfied him (the judge) that defendant held himself out to Mr. Pilley as the person responsible in connection with the venture and he led plaintiff to suppose that he was Balla's principal. There was no reason to doubt that defendant was paymaster for the project and that he paid sums of money in respect of it on his own account. Mr. Pilley was entitled to succeed and there would be judgment for him for £130, with costs. The counter-claim of Mr. Isaacs would be dismissed, with costs.

* * *

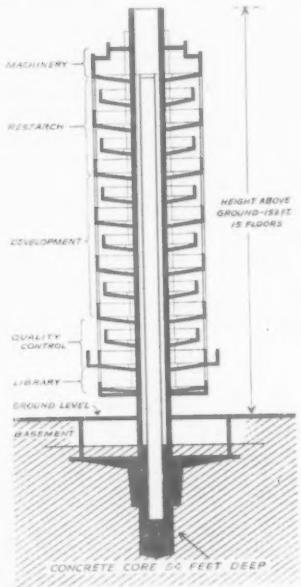
Sir Royden Dash, D.F.C., F.S.I., F.A.I., formerly Chief Valuer to the Board of Inland Revenue, has been appointed Vice-Chairman of Bracknell Development Corporation by Mr. Hugh Dalton, Minister of Local Government and Planning.

Sir Royden Dash succeeds Mr. H. W. Wells, recently appointed Chairman of Hemel Hempstead Development Corporation.



HELIO-LABORATORY FOR JOHNSON WAX CO., WISCONSIN, U.S.A. ARCHITECT: FRANK LLOYD WRIGHT

Above: general view including the administration building erected in 1936. Left: the fifteen-storey Laboratory Tower by night.



Square floors alternate in the tower with circular mezzanines. The top picture shows laboratory working space on a square floor with the line of the soffit of the mezzanine above it. Note the horizontal glass tubing of the outer wall. The 2 in. diam. tubes are separated by moulded synthetic rubber insulating strips. Aluminium uprights with semi-circular notches support the tubes, held in place by stainless steel wire.

View of North and East sides of the new store as seen from the lower end of Trinity Street

OWEN OWEN LTD. NEW STORE

Broadgate, Coventry

ARCHITECT: ROLF HELLBERG, F.R.I.B.A.

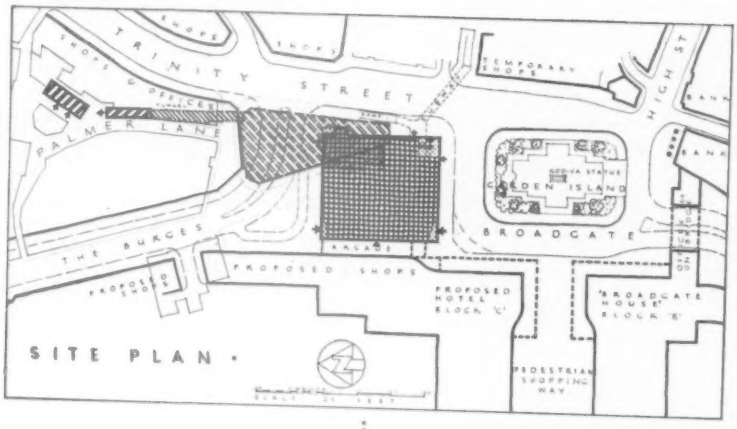
Lower ground floor entrance. North facade and arcade from Cross Cheaping

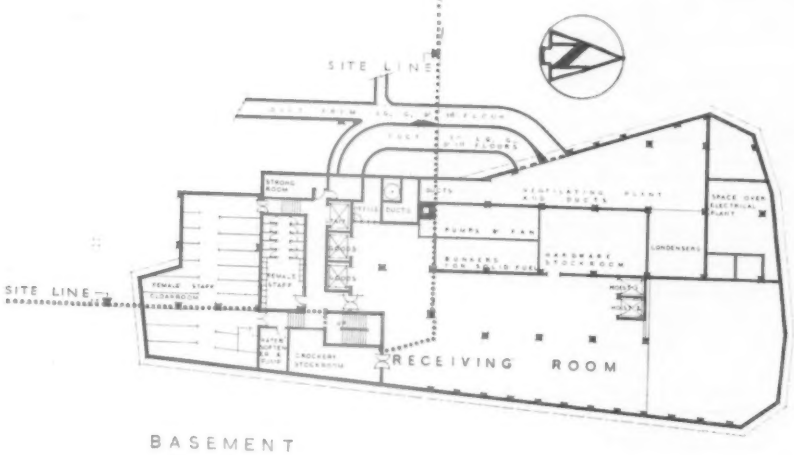
CONSTRUCTION work is now commencing on Block H of the Coventry Reconstruction Scheme, the new Owen Owen department store which will replace the building demolished during the last war and which now only exists as a huge hole to the north of Broadgate.

The Architect, Rolf Hellberg, F.R.I.B.A., has been working for more than two years on the design of this building, which has many new features and should, when complete, be one of the finest department stores in this country.

Site

The building, which will be roughly square in shape, will fill the north side of Broadgate and cover the present Street of Cross Cheaping, which will shortly be closed to traffic. It is an island site, three sides having road frontage, and the fourth a covered shopping arcade linking Broadgate directly to the Burges.





BASEMENT

SUB-BASEMENT

Layout

The layout is unusual in several respects.

Firstly, the basement and sub-basement, which contain the receiving and despatch rooms and all the engineering plant rooms, is practically entirely outside the building proper and will be covered by a double carriageway linking the Burges to Trinity Street. Access to these basements is through the existing service tunnel from the present receiving building in Palmer Lane.

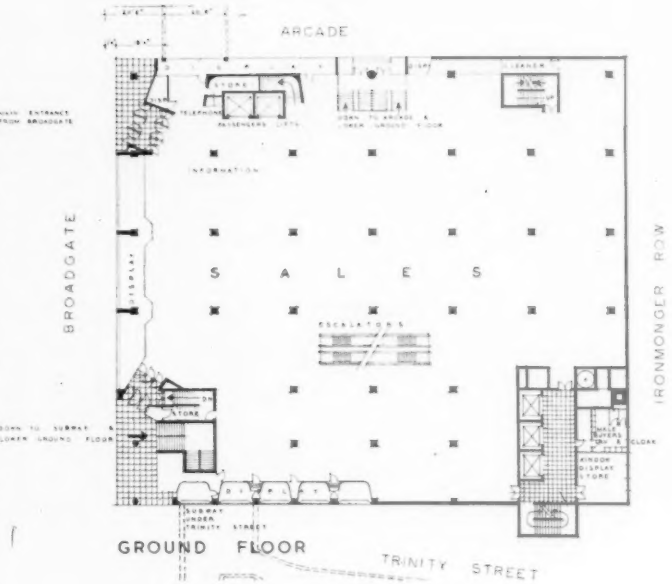
Secondly, the building above Broadgate level is really two buildings in one, a long narrow stock and office block on the Trinity Street frontage alongside the broad sales block which fills the majority of the site. The sales block has four floors and the stock block six in the same height, with a lower ground floor extending under both blocks. This arrangement of two sales to three stock floors was decided to be the most convenient and economical layout after very considerable research by the architect into every orthodox and unorthodox method. It involves the minimum waste of valuable space and should be exceptionally easy to operate in practice.

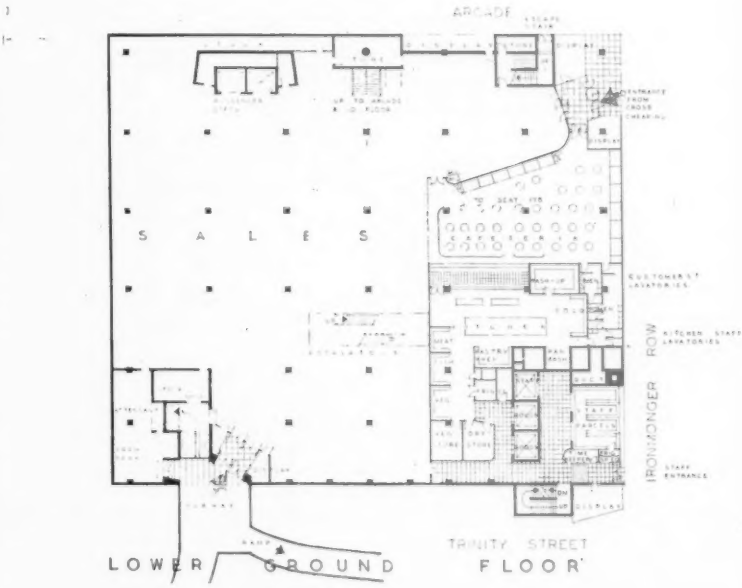
Thirdly, due to the fall in ground levels between Broadgate and the Burges, the store has two ground floors, the upper entered from Broadgate near the top of the proposed arcade, the lower from the Burges at the bottom of the arcade. There is a half level entrance leading to both floors from the middle of the arcade. Stairs to the pedestrian subway now under construction are being provided in the building at the Trinity Street end of the Broadgate front, and there are secondary entrances to the two lowest sales floors at the head and foot of these stairs, the latter being in the subway itself.

External Appearance

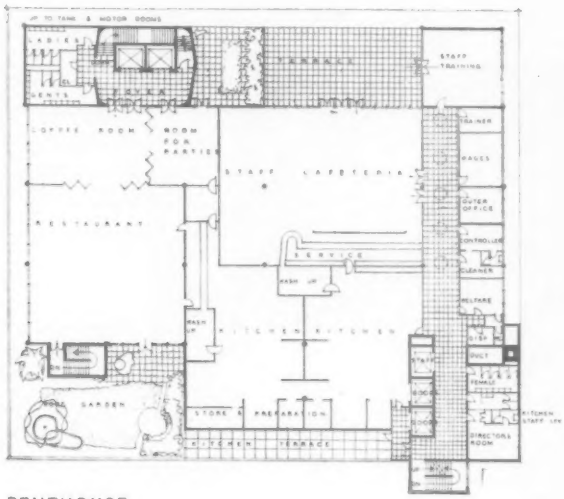
The building has been designed to be equally attractive and striking by day and by night. It is claimed to be the first building conceived with "discontinuous" elevations in permanent contrasting colours and textures changing from facade to facade.

Broadgate front. The Broadgate



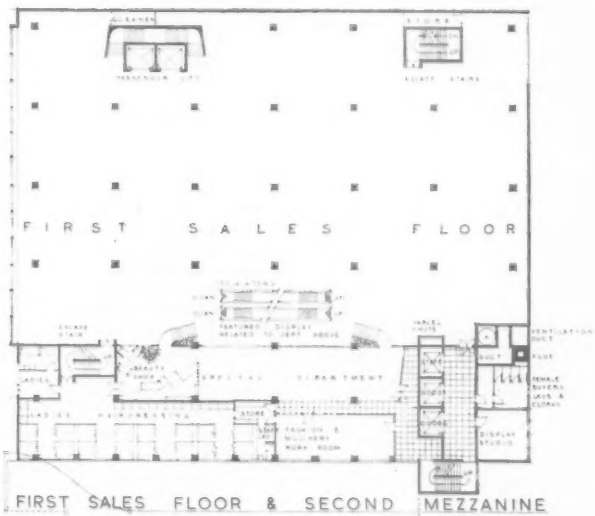


OWEN OWEN DEPARTMENT STORE



PENTHOUSE

1/48 in. 1 ft.



FIRST SALES FLOOR & SECOND MEZZANINE

front has an American type visual entrance allowing the shopper a complete view of the ground floor sales area from outside. Non-reflecting windows of a new type, using only flat plate glass, are used all along this front and displays may be closed at the back or left open to allow a view of the sales floor. A low metal canopy will shield shoppers from inclement weather.

Above the canopy an enormous window, over one hundred feet long by over forty feet in height, projects from a frame of travertine marble. The window is double, having an inner face, eighteen inches behind the outer face, and in the interspace venetian blinds shield the sales floor from the south sun. Hidden floodlights in the windows will light the whole window area as a great glowing rectangle by night. The end of the stock block shows on this elevation as a wall of brown brick matching the walls of Broadgate House.

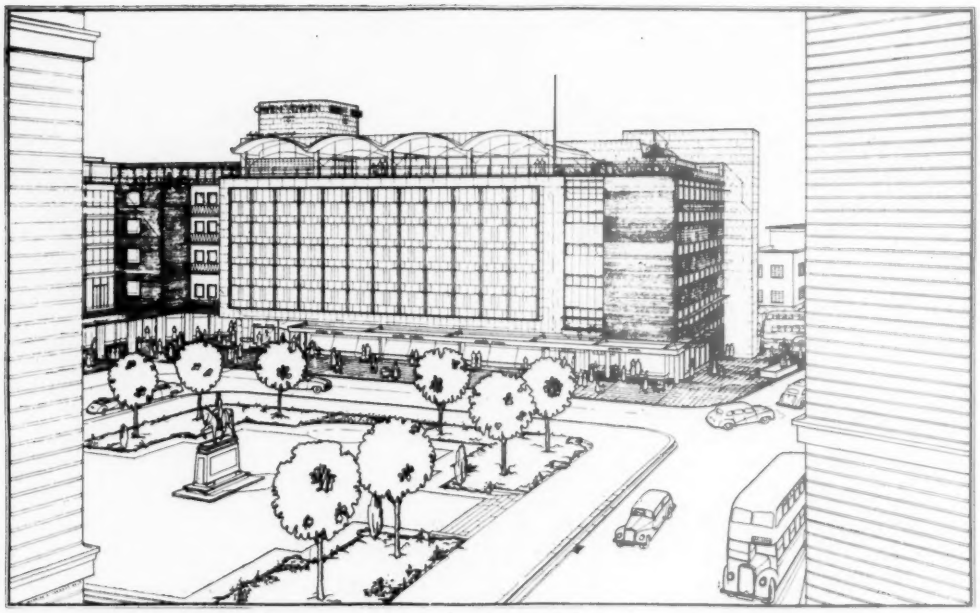
On the roof four curving arches of shell concrete, with almost invisible supports, cover the restaurant, and when lit from behind at night will appear to hang in the sky. The great window and curving roofs will probably become a well-known feature of central Coventry.

Over ninety feet above pavement levels, a square lift tower of fluted concrete will rise above the roof gardens and restaurants.

Trinity Street Front. Long strips of continuous high level windows, lighting the stock floors, are set in a curtain wall of salmon pink deeply fluted terracotta, which will contrast with the green Hornton stone plating the sheer walls of the service lift tower which serves the five sales, seven office and stock floors, and two basements and rises nearly a hundred feet above the pavement. The north-east corner is faced with brown bricks, and here at the foot of the tower is a large projecting display window.

North Frontage. The north side, which faces the present Ironmonger Row, is perhaps the most spectacular. The facade is mostly brick, the whole central area being an almost windowless wall over sixty feet high and eighty feet long. Above the main entrance in the north-west corner and facing anyone approaching from the Burges the wall is completely removed and fully glazed

B R O A D G A T E , C O V E N T R Y



The new Department Store with Broadgate and Godiva Statue in foreground

to show a complete section of the building from top to bottom.

Construction

The building structure is reinforced concrete throughout, the sales block being mushroom construction. This form of construction, peculiar to concrete, may be compared to a series of one-legged tables standing side by side with edges touching and superimposed on each other also. In this case the columns and tables are of square tapering form and should appear much more graceful than the usual cylindrical and conical forms. The reinforced concrete work is being designed by Scott and Wilson, who have recently handled this work for the Festival Hall at the South Bank and are also responsible for Broadgate House.

Internal Layout

All the five sales floors will be served by lifts and escalators.

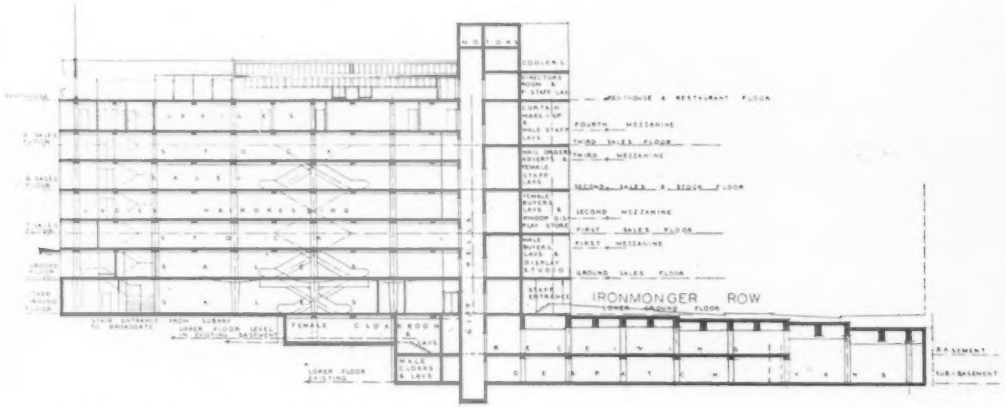
The air-conditioning, ventilating and heating plant is being designed by Roger Preston and Partners to ensure the greatest comfort for the public and the best possible working conditions for the staff. The lighting and colour schemes will change from floor to floor and department to department, according to the type of merchandise, to produce variety and interest for the shopper.

South front and main entrance from Broadgate to upper ground floor

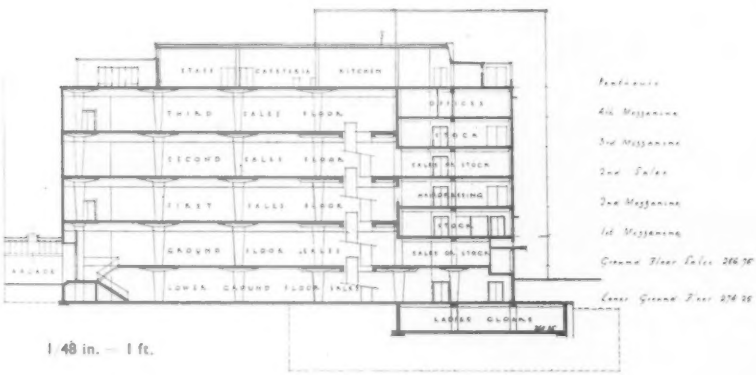
Restaurants

There will be a large cafeteria on the north front of the lower ground floor, capable of serving full meals as well as snacks.

The main restaurant is on the roof and is approached through a spacious coffee lounge. It has its own roof gardens as has the private party room which adjoins it. All three rooms and their gardens can be thrown together on special occasions. In summer the glass walls of the south front can be slid back to open the restaurant and lounge



SECTION ON LINE X-X



1 48 in. = 1 ft.

SECTION ON LINE Y Y

to the terrace more than sixty feet above Broadgate and Lady Godiva.

Staff Amenities

The staff will have their own cafeteria at roof level and their own private roof garden. Staff training and welfare offices will be alongside the cafeteria and no effort has been spared to make working conditions as pleasant as possible.

Progress

The site signboard will contain viewing panels to enable the public to watch the progress of the work, and a coloured perspective of the completed building will be displayed in the same position.

The first section of the work, which will start immediately, will be the gutting and rebuilding of the basement which in the new form will be carrying the traffic roads above. Work on the superstructure itself is expected to commence in six months time. The main structure should be up to roof level by late 1952, and by this date the two lowest sales floors and the basements should be in use. The whole building should be finished and in use by late 1953. The building contractors will be Bovis of London.

Cost. £600,000.

OWEN OWEN LTD. NEW STORE

architect: ROLF HELLBERG, F.R.I.B.A.

Before and after conversion.

House at Culross Fife

architect

KENNETH THOMS, A.R.I.B.A.

THE house is situated in the ancient Royal Burgh of Culross in Fife. The town is probably the best preserved in Scotland of the 17th century period, and many of the houses have been restored by the National Trust for Scotland.

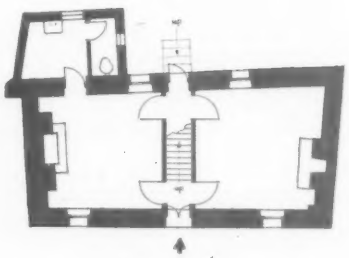
The house was originally built in 1673, and the architect has left unaltered the N.W. facade in order to maintain the character and unity of the old terrace, in which this house stands. The street is narrow and it was not possible to obtain a photograph of the delightful street front. On the S.E. front it was found necessary to increase the size of the windows to give adequate daylight in the interior. Existing window or door openings were used where possible, though this was not allowed to dictate the new plan.

The building is roofed with the original red pantiles, and the old external walls are of yellow, grey, and pink sandstones from a local quarry.

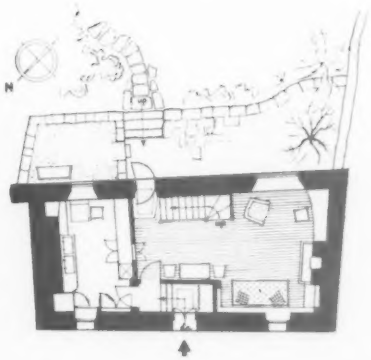
A spacious living room has been created, with easy access to the garden and to the kitchen. Both house and garden have a lovely uninterrupted view of the River Forth. The bathroom upstairs, was planned on the N.W. side of the house, where there is no view, and both bedrooms have a fine outlook to the river.

Central heating is provided by the boiler installed at the back of the living-room fire. Hot water for bathroom and kitchen comes from a gas water circulator, which is thermostatically controlled. Cooking is by gas.

Light, cheerful colours have been used throughout in the interior. The living room is principally white and pale Italian blue, with daffodil yellow curtains.



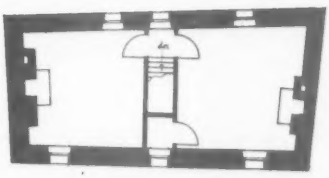
GROUND FLOOR PLAN (BEFORE)



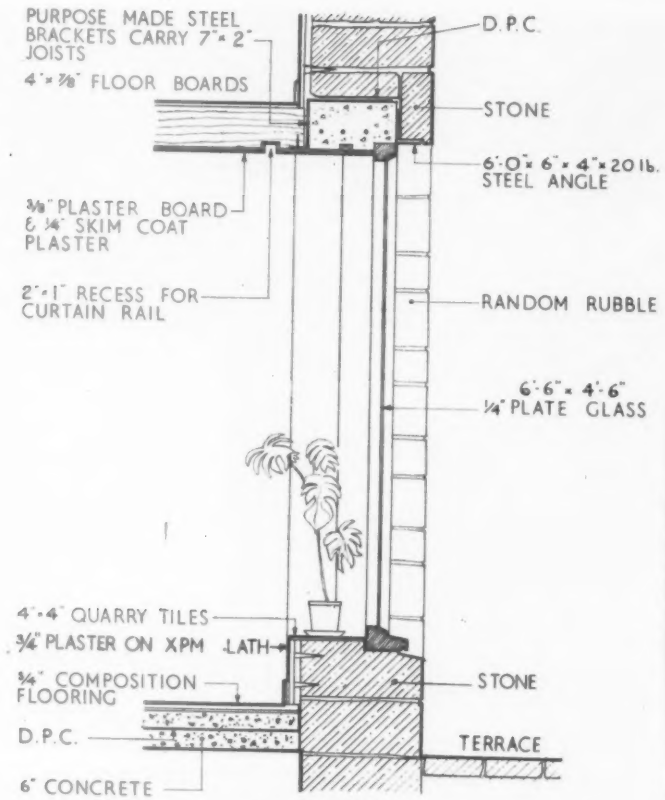
GROUND FLOOR PLAN (AFTER)

SCALE: 1/8" = 1' 0"

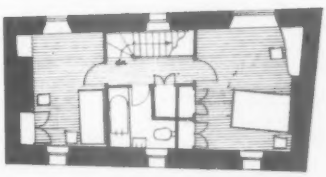
5 0 5 10 15 20 25 30 FT



FIRST FLOOR PLAN



Living Room Window



FIRST FLOOR PLAN

HOUSE AT CULROSS

architect KENNETH THOMS

LIBRARY NOTES

Exhibition Design

Edited by Mischa Black. The Architectural Press. 25s.

THIS is a "How-to-do-it" book—at first thoughts rather a strange bible for the exhibition hall, where everyone tries to steer clear of those things that have already been done. But Mischa Black's introductory chapter justifies the book. It is of particular importance to the architects among exhibition designers, who too often satisfy their thwarted lust for architecture without fulfilling the purpose of the exhibition: to sell an idea or to sell goods. Of propaganda exhibitions, what is wanted, he writes, "is to implant, or sustain, a general idea in the mind of the visitor, with the additional memory of one or two facts which can support the emotionally accepted idea if the visitor's intelligence should later challenge it." In serving this rather sinister purpose there is plenty of scope for architectural fun and the display of sensibility and imagination.

This first chapter, the longest and by far the best in the book, sets out with admirable clarity the basic requirements of all exhibitions and the special problems of the various types. It is suitably spiced with quiet wit and sales talk aimed at promoters, outlining what they may expect in return for their money and the advantages of employing one of the R.I.B.A. or S.I.A. boys.

The rest is a text-book: dull reading but useful stuff. The note on Planting was exceptional in that its author, H. F. Clark, seems to have enjoyed writing it.

About half of the space is taken up with illustrations—mostly photographs with sensibly informative captions. (It is, after all, the final photographs, that we naughty non-commercial architects tend to design for.) A good book, particularly endeared to me, because on page 44 I am credited with a stand which was in fact designed by Maxwell Fry and Jane Drew.

NEVILLE CONDER.

William Strickland

Architect and Engineer (1788-1854) by Agnes Addison Gilchrist. University of Pennsylvania Press. $10.

WILLIAM STRICKLAND was one of the most successful architects in the United States in the first half of the nineteenth century. His work coincided to some extent, in style and in character, with that of his English contemporaries, Smirke, Nash and Decimus Burton. His most important architectural designs were carried out in the style of the Greek Revival, and his sole guide was Stuart and Revett's *Antiquities of Athens* (for, like most of the Greek Revivalists, he never visited Greece). This was for him the definitive work on architecture. "The student," he insisted, "need go no further than the *Antiquities of Athens* as a basis for design." Not that it was always easy; "I have had more difficulty," he wrote, "in reconciling the proportions of ancient architecture to modern purposes of utility than any one thing else in my profession." But it never occurred to him to depart from these proportions, nor did he reach such heights of ingenuity as are exemplified in Inwood's St. Pancras Church, London.

In 1818, he built the Second Bank of the United States, which reproduced the illustrated restoration of the Parthenon. In 1824 (the year before John Nash built the Marble Arch) he copied the Arch of Septimus Severus to provide a triumphal entry into Philadelphia for General Lafayette. And in 1845, he designed the State Capitol for the new town of Nashville, Tennessee, in the Ionic Order, and crowned it with the Corinthian of the Choragic Monument of Lysicrates. These were probably his principal works, and that they are interesting and have a certain monumental merit there is no doubt. But is that enough to justify the considerable research that has gone into the production of this book? For it must rank highly as a most perfectly prepared and beautifully presented piece of historical study. The technique of presentation, in which the first three chapters are devoted to a summary discussion of Strickland's life, character and style, and the Appendices contain a chronological statement of his work and activities, year by year, is a model of how a thesis ought to be written. Such skilled research and scholarship as are apparent in this book are worthy of a better cause than William Strickland.

CECIL STEWART.

English Inn Signs

Revision of "Larwood and Hotton 1866," with an additional chapter and many illustrations of modern inn signs, by Gerald Millar. Chatto & Windus. 42s.

"INN signs give a touch of colour to the streets of a town and added attractiveness to the country inn." So says the publishers' announcement, and who will disagree? Many will retain, as the outstanding recollection of a charming place, some striking inn sign which seems to focus the character of the scene. The perfect village of Denham, known before the cinema had been invented and while Col. Way still reigned as squire at Denham Place, yet lives in the writer's memory most vividly by its noble "Swan" sign projecting from a wisteria-clad front. Similarly the "Bell" at Stilton, and many other signs in some way striking, serve to recall the agreeable journeyings of past years. The issue of this handsome book now is particularly apposite, for a recent news item reads: "£100,000 for Inn signs.—New inn signs to be hung in time for the Festival of Britain will cost £100,000."

In these pages can be found all possible information useful from the aesthetic and emblematic side to the designers of inn signs of every conceivable type, whether the simple painted board, the post-borne standard, the bracketed swinging sign (so prolific in fine smithwork), or the bold road-spanning form, of which a few still survive. The "George" at Stamford, and the "Fox and Hounds" at Barley might well inspire others, though the vanished sign at Scole (virtually a triumphal arch) seems an unlikely model. The varities of motive—heraldic, humorous, hero-worshipping, or frankly decorative, are all given place. The only notable omission is the practical; those familiar with John Fothergill's books may remember his troubles with local authorities about his pavement sign at Thame; and with structural weaknesses at Market Harborough. Both signs are illustrated in this book. *Verb. Sap.*

EDWIN GUNN.

Small Towns

Their Social and Community Problems. By L. E. White. Published by the National Council of Social Service, 26 Bedford Square, W.C.1. Price 3s. 6d.

THE small cathedral and market towns, as well as some of our small industrial towns, are a heritage handed down to us. Have they received the attention they deserve? As Mr. White quite rightly states in the preface to his excellent thesis on the problems of small towns, "Much has been written about the problems of great cities, of their slums and new housing estates, whilst a wealth of literature has been devoted to the revival of the countryside." Why is it, therefore, that the social and community problems of small towns have been so singularly overlooked. In this superficial age do we not judge success by mere size? This country would be the poorer if many of these towns were allowed to fade into oblivion: they enshrine values and ways of life which we can ill afford to lose.

Mr. White suggests that as the construction of completely new towns will of necessity be slow, our economic resources "might most profitably be employed in the planned and orderly expansion of a fairly large number of small towns." Many have advocated this policy but their voices have been drowned by the New Towns enthusiasts.

The author discusses the advantages and disadvantages of life in the small towns at the present time—houses with gardens, readily accessible open spaces, less dirt, smoke and fog; balanced against the economic problems of single industry towns, and the poor educational, recreational and cultural facilities of many small towns.

The facts which are brought out in this book cannot fail to be of interest to all who have any regard for the smaller towns and their future.

In the final chapter, he discusses solutions to their problem and makes a number of constructive suggestions. It is to be hoped it will be widely read and, what is more important, that it may bear fruit.

M. E. TAYLOR.

News Sheet

International Federation for Housing and Town Planning. November 1950.

THIS, the 18th News Sheet, contains many interesting articles and reviews within its 32 pages. After reading the articles one wonders if the majority of technicians working on housing and planning in this country are not so engrossed with the day-to-day problems that they are unable to make a study of what other countries are doing. This News Sheet provides an excellent medium through which studies carried out in other countries may be read.

This issue contains articles on Village Development in Palestine under the British Mandate; European Housing Problems and the United Nations; Survey of Living Conditions in Rural France, Housing in Italy, etc. Gaston Bardet's article on "Polyphonic Organisation, a proposed new technique for the composition of large planning units" should be read by every architect and planner interested in the well-being of design. It is packed with common sense. Let us hope it will be reprinted in other journals.

This News Sheet may be obtained from the Editorial Offices, I.F. for H. and T.P., Singel 453, Amsterdam (c), price 75 cents.

M. E. T.

Some Principles of Planning

by F. B. Gillie and P. L. Hughes. Published by the University Press of Liverpool, Liverpool, 3. Price 5s.

THIS booklet comes at an opportune moment and in a form that invites reading rather than placing in a bookshelf. It carefully avoids any appearance of propaganda for civic improvements and quite rightly contains no photographs, historic maps or future plans of any sort. The fourteen short chapters average little over six pages each.

The authors promptly reject the cumbrous phrase "Town and Country Planning"—and substitute "land planning" instead. They point out that the essential principle behind the Town and Country Planning Acts of 1947 is the examination of each projected significant change of land use to see whether it is sound: the examination is carried out by a public authority without whose consent the proposed change may not take place. To carry out this function the existence of preparation of plan is not essential, although a plan does provide a method of forming a policy for it. They further add that the planning function must aim at the skilful guidance of the forces of change rather than at opposing them.

In discussing the Controlling Agent (Chap. IV), the booklet discusses the gradual evolution of the strengthened staffs requiring a type of local authority officer which scarcely existed before, and how this gradual change has so far largely concealed the need for a radical reorganisation of local authority administration. The importance of Highway Authorities working at the same speed and in step with Planning Authorities is also given merited prominence, when the fundamental problems of land planning are discussed under the sub-heading of agriculture, mineral working, industry, residence, transport, and amenity.

On Built-up Areas (Chap. VI), the authors claim that public initiative and compulsory rearrangement are the essence of change and that the chief difficulty is to secure agreement on the plan and to develop the necessary organisation for executing it, rather than the absence of a cleared area.

In discussing the Nature of a Plan (Chap. VIII), the authors, who are also officials of the Ministry of Local Government and Planning, admit a major problem of local Planning Authorities to-day: it is how the policy that major flows of population should be controlled, but it remains to be seen whether adequate machinery has been created to secure this. This prevents the central Planning Authority from giving adequate regional guidance and in many cases leaves the local authorities without the means of knowing how tightly it is really possible to plan.

The importance of a survey with specific end in view rather than as an end in itself, the neglected activity of analysis—necessary in all planning, the assertion that excessive attention has been concentrated on the visual side of planning and on amenity question generally, and the need for the land planner to display a hard-headed ability to think in terms of earning the nation's daily bread here and now—all indicate the authors' awareness of the pitfalls into which those attempting to grasp the great opportunity of the 1947 Planning Acts may fall or are falling.

PHIPPS TURNBULL.

Practice and Procedure for the Quantity Surveyor

By Arthur J. Willis, F.R.I.C.S. Published by Crosby Lockwood & Son, Ltd. Price 18s.

IN dealing with the subject of practice and procedure for the quantity surveyor, the author has embarked on the more difficult and perhaps controversial aspect of quantity surveying than the technical side dealt with so efficiently in his previous books. Mr. Willis finds it a little difficult to define practice and procedure and begins by adopting a negative definition, namely that it is not the technical knowledge of the processes involved in preparing or pricing a bill of quantities, and continues by regarding everything else as a subject for treatment.

The book opens by dealing with the various duties of the quantity surveyor, his relationship with other members of the building industry and their individual functions. Then follows a general description of the services rendered by a quantity surveyor, including the several stages in the preparation of a bill of quantities, the various methods of arriving at approximate estimates, certificate valuations for progress payments and preparation of variation accounts. In two chapters on Law Mr. Willis deals at some length with the quantity surveyor's legal relation to his client and certain legal problems he may meet arising out of the administration of a building contract. General policy, office organisation and management, including provision and equipment of the office for the beginner in practice are all covered in turn, followed by a chapter dealing with the financial side of running a business and the keeping of proper books of account. The book includes a chapter on partnership, outlining some of the important aspects which may well be instructive to the inexperienced and concludes with a brief chapter on the surveyor in public service, describing the distinction between his outlook and that of his counterpart in private practice.

The whole subject is viewed principally, however, from the angle of the quantity surveyor in private practice and its greatest appeal is likely to be to the young surveyor wishing to extend his knowledge of the profession and to the new-born practitioner who has previously had little opportunity of seeing "behind the scenes." Undoubtedly one of the most useful sections of the book is the appendix of forms and precedents, in which is given a number of examples of typical letters, forms, etc., used in everyday practice. Mr. Willis writes that this book is not intended for the established quantity surveyor in practice, who will have explored the subject for himself, yet, whilst it is true that the experienced surveyor will find much of the subject matter full of elementary detail, one cannot but benefit from the experience of others.

LESLIE W. CLARK.

Planning Appeal Decisions

The latest bulletin of selected planning appeal decisions issued by the Ministry of Local Government and Planning contains a mixed bag of 20 appeals. They are so mixed in character that the cases enumerated are of little help to the general architectural practitioner. It is to be hoped that a special edition of appeals of special interest to the architectural profession might be prepared and published.

A lead on the thorny question of external appearance and amenity might help authorities to refuse many of the plans submitted. It would amaze many architects to see the works of abomination termed plans which the authorities are asked to approve. The submitter's intentions are difficult to comprehend. Let us hope that there will be a general tightening up on these submissions.

A Council refused the erection of a wooden lattice radio mast 6 feet square at the base and 39 feet high, which the applicant wished to erect in the garden of a small semi-detached house in a modern residential suburb. The Minister upheld the refusal, as he felt "the erection of mast of the size and design proposed would be highly detrimental to the amenities of the neighbourhood."

When is it necessary to make an application for planning permission, is often a difficult question under the latest General Development Order. To be on the safe side many applications are put forward to authorities which do not really need permission. A Council received an application for alterations to a shop front which they refused. The Minister in his adjudica-

tion, ruled that planning permission for the proposed alterations would be required only if it could be established that they would result in materially affecting the external appearance of the building. He decided that they would have no such effect. Planning permission was not therefore required.

A similar case was where an authority refused permission for the conversion of an existing shop into two shops on the grounds that the alterations would adversely affect the character and value of the building. The Minister determined that the proposal could not be held to constitute development, and therefore permission was not required. If, however, any alterations proposed in the course of conversion which would materially affect the external appearance of the building would require an application for permission, one is tempted to ask who is to be judge on the words "materially affect." Even expert technical opinion differs on this point.

In reading through the cases stated in this bulletin, one has the feeling that many have been used as examples to show authorities that if planning is not going to be brought into disrepute by refusing trivialities, they will have to have a wider vision of the true meaning of planning.

M. E. T.

BOOKS RECEIVED

Matthew Digby Wyatt, by Nikolaus Pevsner. Published by Cambridge University Press, Bentley House, 200 Euston Road, N.W.1. Price 4s. 6d.

Mitchell's Building Construction, Elementary Course, by George Mitchell and A. M. Mitchell. Published by Batsford. Price 10s. 6d.

The Building Society Surveyor, by Cecil M. Hodgman. Published by Franey & Co. Ltd., Graham House, Tudor Street, E.C.4. Price 9s. 6d.

Church Design, by Alan G. Fudge. Published by Epworth Press, Epworth House, 25-33 City Road, E.C.1. Price 4s.

London—Historic Buildings. Published by Batsford. Price 7s. 6d.

Spons' Architects' & Builders' Pocket Price Book, 1950-51. Published by Spons Ltd. Price 15s.

Structural Theory and Design, by J. McHardy Young. Published by Crosby Lockwood & Son Ltd., 39 Thurloe Street, S.W.7. Price 25s.

Contemporary Structure in Architecture, by Leonard Michaels. Published by Chapman & Hall, 37 Essex Street, W.C.1. Price 68s.

One Thousand Years, by The Rev. Louis A. Ewart. Published by The Church Monthly Office, 34 Craven Street, Strand, W.C.2. Price 5s.

An A.B.C. of Public Health Law, by J. F. Garner. Published by Sanitary Publishing Co. Ltd., 8 Breams Buildings, Fetter Lane, E.C.4. Price 15s.

Exhibition Design. Published by Architectural Press, 13 Queen Anne's Gate, S.W.1. Price 25s.

Birds In London. Published by the Ministry of Works. Price 1s. 6d.

Architecture of Ancient Greece, by Williams Bell Dinsmoor. Published by Batsford. Price 30s.

Sweden, by N. S. Roberts. Published by Board of Trade, Millbank, S.W.1. Price 3s. 6d.

SUMMARY OF THE REPORT OF THE SCOTTISH HOUSING ADVISORY COMMITTEE ON NON-TRADITIONAL HOUSING

The main conclusion of a report by the Scottish Housing Advisory Committee on the "Design and Workmanship of Non-Traditional Houses," which was published on April 2 (H.M.S.O., (price 1s. 6d.), is that there is no reason why Scottish local authorities should not go on building permanent non-traditional houses. These houses have no serious constructional defects and satisfactory results can be achieved by the full use of the present system of safeguards. The report has been commended to local authorities by the Secretary of State.

Some defects could have been avoided by good supervision by local authorities' architects and Clerks of Works. Bad workmanship was responsible for a considerable number of defects and the only remedies are clear instructions and close supervision. But no attempt should be made to reduce the speed of work or discourage incentive schemes. Training courses for foremen and Clerks of Works are valuable and should be supported by both sides of the industry.

The Committee approved a suggestion by the Department of Health that a Scottish Examination Panel should be set up, on which local authorities would be represented, and which would take the responsibility for approving the design of non-traditional houses.

The Panel, as the Committee see it, would consist of a Chairman appointed by the Secretary of State; lay and technical representatives of local authorities; an architect appointed after consultation with the Royal Incoration of Architects for Scotland; an architect appointed after consultation with the Scottish Special Housing Association; and technical assessors representing the Building Research Station and the Department of Health for Scotland. The Secretary of State proposes to consult the Scottish local authority associations about the formation of this Panel.

The report is concerned solely with the permanent non-traditional house—the essential feature of which is that at least the main part of it is produced in a factory by mass production methods, although it often uses bricks, timber and other traditional materials. The report shows that in the first three-quarters of 1950 the numbers of traditional and non-traditional houses started by local authorities were almost equal.

Only a little over one-third of all Scottish local authorities responded to the Committee's invitation to give evidence about defects which they had found in non-traditional houses.

The Committee's general conclusion was "that the number of serious defects submitted in evidence was small in relation to the number of houses built; that the desire for speedy erection was in some measure responsible for the fact that some defects were not detected earlier; and that, generally speaking, satisfactory results could be attained by making full use of the present system of safeguards in accordance with our recommendations."

The Committee approve the Government's present policy, which is not to guarantee programmes to individual promoters, "as this removes their chief incentive to set a high standard." But so long as local authorities were free to choose the type of house, there was no reason why the Government should not continue to ensure that the annual housing programme contains a reasonable number of non-traditional houses.

The proposed Scottish Examination Panel should not normally approve a design before a prototype has been erected and inspected at all stages of construction. If the feature under test is in the exterior of the house, final approval should not be given until a year after the prototype has been completed, in order that the effect of the weather at all seasons can be inspected.

The "maintenance period," during which contractors are obliged to make good, without charge, defects due to bad workmanship or materials, should continue to be 12 months. The Committee thought that there was also a general obligation on the contractor to make good work which is later found not to be in accordance with the contract.

The Committee found it difficult to distinguish precisely between traditional and non-traditional houses, since innovations in structural design or the use of materials were becoming less common. This was partly due to the fact that features like "No-fines concrete" and copper roofs, once regarded as experimental, were now generally accepted as sound traditional practice. Some of the post-war innovations had now been abandoned by contractors in favour of orthodox methods "perhaps because they were substituted for materials which are no longer scarce, or perhaps because the contractor was responding to criticisms of the innovations." The real difference, in the Committee's view, lay between houses designed for a single local authority by their own Architect, and houses built to a uniform plan by a large contractor in the area of any local authority who wanted them. Either of these types might have unorthodox or experimental features. But the Committee's suggestion that "non-traditional" houses should be described as "standard" houses, and other houses as "locally-designed" has not been accepted by the Secretary of State.

Town and Country Planning Textbook, edited by A.P.P.R. Published by Architectural Press. Price 42s.

The Work of Oscar Niemeyer, by Stamo Papadaki. Published by Chapman and Hall. Price 68s.

How to Write Technical Books, by John Gloag. Published by George Allen & Unwin Ltd. Price 12s. 6d.

Some Principles of Land Planning, by F. B. Gillie and P. L. Hughes. Published by University Press of Liverpool, 177 Brownlow Hill, Liverpool 3. Price 5s.

CURRENT MARKET PRICES (LONDON)

(These prices apply to material purchased in the quantities named or otherwise as might be expected for a new building of medium size.)

AGGREGATES AND SAND

1½ inch—all in—ballast	18/5	Yard cube
¾ inch do. do.	19/–	delivered
¾ inch screened shingle	17/4	(in five yard
¾ inch do. do.	18/5	loads or
¼ inch granite chippings	55/–	more)
Sharp washed sand	18/5	
Pit sand	16/9	
Building sand	16/9	
Broken brick	17/6	
1½ inch shingle	16/3	
Cartage of muck	7/–	

CEMENTS, LIMES, PLASTERS, ETC.

	Per ton
London: Delivered centrally.	
CEMENTS—Portland (6 ton loads)	85/6
Do (but 1 ton to 5 tons 19 cwts.)	90/6
Do.—Rapid hardening (6 ton loads)	91/6
Do.—Do. (but in 1 ton to 5 tons 19 cwts.)	96/6
Do.—"Aquacrete" (but in 1 ton to 5 tons 19 cwts.)	122/–
Do.—"417" or Polar (1 ton to 5 tons 19 cwts.)	115/–
Do.—White (1 ton lots)	243/–
Keenes Cement—pink—coarse (2 ton lots)	158/9
Do.—white—coarse (do.)	164/–

LIME—	109/–	(1 ton loads) delivered.
Hydrated	109/6	(2/3 do.) do.
and	99/6	(4/5 do.) do.
Ground	98/6	(6 do.) do.

PLASTER—	Price	unit	bags	
Sirapite, coarse	122/9	per ton	included	delivered
Do. finish	130/9	do.	do.	do.
Hardwall	126/3	do.	do.	do.
Plaster, pink coarse	119/3	do.	do.	do.
Do. white do.	127/–	do.	do.	do.
Lime and hair	71/3	per yard cube	–	do.
Plaster baseboard	2/1½	yard super (150 Yds.)		do.

FIRECLAY—		
Stourbridge, loose (1 Ton lots)	135/6	Ton delivered
Fire cement	10/3	14 lbs.

BRICKS

BACKING BRICKS (In truck loads)—		
Flettons	96/–	per 1,000 delivered
Do. Keyed	98/–	do.
Do. bullnose	116/–	do.
Blue wirecuts	398/6	do.
White	136/–	do.
Southwater engineering (No. 1)	280/–	do.
Firebricks—2½ inch	50/–	per 100 delivered
Do. —3 inch	58/6	do.

STOCK BRICKS—		
Mild stocks	163/6	per 1,000 at Works
Second do.	188/6	do.
First do.	198/6	do.

Add for delivery—approx. 40/– per 1,000 in lorry loads.

FACINGS—		
Rustics	121/–	per 1,000 delivered
White	140/–	do.
Blue pressed, 2½ in.	442/–	do.
Do. bullnose	456/–	do.
Reds (Multi sand faced)	200/–	do.
White glazed stretchers	1140/–	do.
Do. headers	1126/–	do.
Do. bullnose	1425/–	do.
Do. double stretchers	1570/–	do.
Do. double headers	1383/–	do.
Breeze fixing bricks	18/6	per 100
Fire tiles and lumps	25/–	foot cube
Wall ties—8″×½″×$\frac{1}{16}$″, black	58/8	per cwt.
Do. but galvanized	85/9	do.
Cement mortar (1 : 3) hand-made	61/6	yard cube

BRICKLAYERS' SUNDRIES—

AIR BRICKS		9×3 in.	9×6 in.	9×9 in.	12×9 in
Iron	each	1/7	2/6	3/10	5/–
Galvanized do.	do.	2/8	4/6	7/–	8/9
Terra Cotta	do.	1/2	2/4	5/9	9/10
Chimney pots, Terra Cotta (11 to 25)	do.	1 ft 5/10	2 ft. 10/3	3 ft. 23/2	4 ft. 39/11

PARTITIONS—

Per Yard super.	Blocks keyed for plastering. Full load.	60 Yds. super.	25 Yds. super.
2 in. Solid clinker blocks	2/10	3/4	4/4
3 in. do.	3/10	4/5	6/1
3 in. Hollow clinker blocks	4/5	4/11	6/2
4½ in. do.	6/1	6/7–	8/5
2 in. Hollow clay blocks	3/10	5/–	5/6
3 in. do.	4/7	6/–	6/9
Half block extra on above	2/–	2/6	2/6
Smooth in lieu of keyed face, extra per side	2d.	3d.	3d.

SINKS—

Fireclay white glazed in and out—standard quality—

	24″×18″	30″×18″	30″×20″	36″×20″
London pattern, 6″ deep	51/7	65/4	69/–	–
Belfast, do., 10″ do.	69/–	104/–	138/–	165/7

Cantilever brackets 4/9 per pair.

GAS FLUE BLOCKS—

	Single Flues.	Double Flues.	
Backing blocks	5/5	10/–	per set of three
Straight do.	2/5	4/–	each
Cover do.	3/6	6/3	do.
Raking do. 45 deg.	5/2	8/4	do.
Do. do. 60 deg.	3/10	5/9	do.
Offset block	6/5	9/6	do.
Closer do.	2/5	4/–	do.
Do. flashing do.	2/–	3/1	do.
Straight flashing do.	2/–	3/1	do.
Terminal and cap	13/–	17/2	per set
Middle do.	12/9	16/5	do.
End do.	13/–	17/1	do.
Corbel block	8/8	16/7	each

DRAINAGE GOODS

STANDARD LIST

SALT GLAZED SANITARY PIPES AND FITTINGS—

Best Quality	4 in.	6 in.	9 in.	
Pipes (2 ft. and under)	1/8	2/6	4/6	each
Bends and knuckles	2/6	3/9	6/9	do.
Single junctions and saddles	3/4	5/–	9/–	do.
Double collars	3/4	5/–	9/–	do.
Ordinary tapers	3/4	5/–	9/–	do.
Manhole interceptors	17/6	22/6	37/6	do.
Gullies (ordinary)	6/3	6/10½	11/3	do.
Extra on cost of last for horizontal inlets	1/6	1/6	1/6	do.
Do. vertical inlets	2/3	2/3	2/3	do.
Do. black iron grids	7½d.	1/0½	1/8	do.
Do. galvanized do.	1/0½	2/1	4/4½	do.
Do. stoneware do.	7½d.	1/0½	1/8	do.

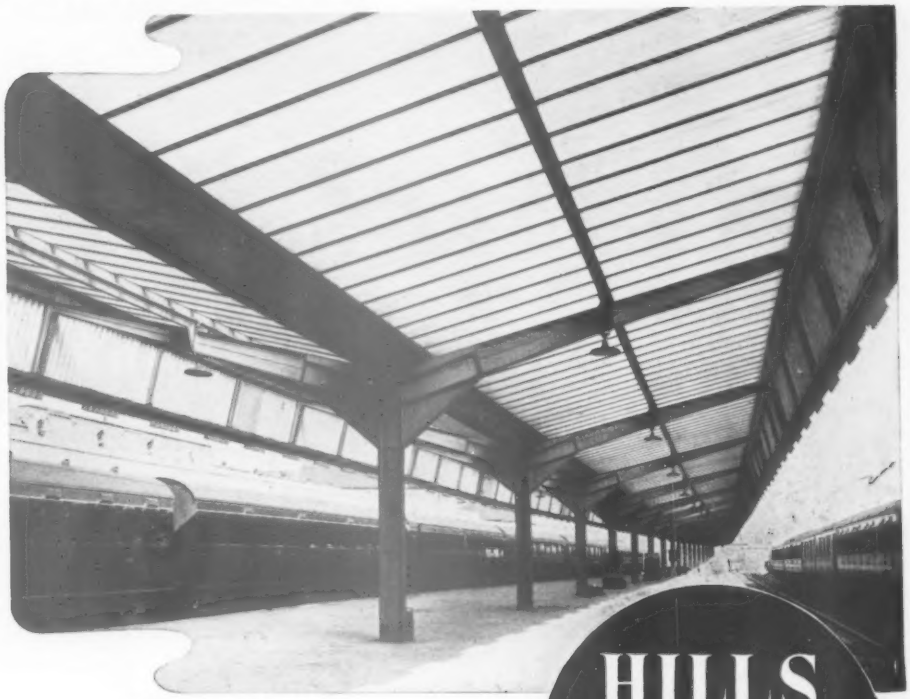
These pipes are subject to the following adjustments according to quality and quantity: *Best* Quality in 2 ton lots—plus 47½ %. Ditto 100 pieces—plus 67½ %. Ditto less than 100 pieces—plus 77½ %.

British Standard are 7½% more cost than *Best* as above detailed. *Tested* pipes are 25% more cost respectively.

IRON DRAINAGE GOODS—

Controlled maximum prices.

Each	4 in.	6 in.
Cast iron pipes, 9 feet long	50/9	75/9
Do. 6 feet do.	37/2	59/6
Do. 4 feet do.	29/8	47/7
Do. 2 feet do.	18/3	28/7
Short bend	11/8	24/2
Junction	20/5	41/11



Hills Patent Glazing at York Road Station, Belfast, for the Northern Counties Committee. Engineer: N. C. Cain, B.Sc.

HILLS PATENT GLAZING

HILLS Lead Clothed Glazing Bars, hermetically sealed, have been tested and proved over many years, and have for long been adopted as standard practice. To fulfil the demand for an alternative to the traditional lead clothed bar, Hills also offer HILUMILUX Roof Glazing Bars which are fabricated from extruded alloy. A unique feature of these bars is the use of oiled asbestos cord, rolled and bedded into the aluminium cap to ensure a dust-and-water-tight fitting. Hills Patent Glazing includes all types of glazed Roofing, Lantern Lights, Deck Lights, Laylights and Ventilation, together with the necessary operating gear. Detailed information will gladly be sent on request.

Hills Lantern Lights at New Factory for Messrs. W. Canning & Co. Ltd. Architects: Harry Bloomer & Son

HILLS (WEST BROMWICH) LIMITED

ALBION ROAD, WEST BROMWICH, STAFFS

'Phone: West Bromwich 1025

London Offices 125 *High Holborn, London, W.C.1*
'Phone: HOL 8005/6

Visit our Stand No. B615/512—April 30—May 11, B.I.F., Castle Bromwich, Birmingham.

A SECTION OF THE NINE BLOCKS OF FLATS FOR THE GREENWICH BOROUGH COUNCIL ON THEIR SPRINGFIELD ESTATE

Architects: MESSRS. T. P. BENNETT & SON, FF.R.I.B.A.

A few other contracts in hand or completed include

MIDLAND BANK, Leadenhall Street	SIR EDWIN LUTYENS, R.A., and MESSRS. WHINNEY, SON & AUSTEN HALL, FF.R.I.B.A.
L'INSTITUT FRANCAIS DU ROYAUME UNI, South Kensington	A. J. THOMAS, ESQ., F.R.I.B.A., M. PATRICE BONNET—Chief Government Architect, Paris
LISAHALLY JETTY, N. Ireland	Admiralty
HILLSIDE COUNTY PRIMARY SCHOOLS, Portsmouth	City of Portsmouth—Architect: F. MELLOR, ESQ., F.R.I.B.A.
HOLLINGBURY SCHOOL, Brighton	Designed by D. J. HOWE, M.Inst.C.E., M.I.Mun.E., Borough Engineer and Surveyor. P. BILLINGTON, A.R.I.B.A., A.M.T.P.I., School Architect.
FESTIVAL OF BRITAIN—1951	MESSRS. E. MAXWELL FRY, and JANE B. DREW, FF.R.I.B.A.

KIRK & KIRK LIMITED

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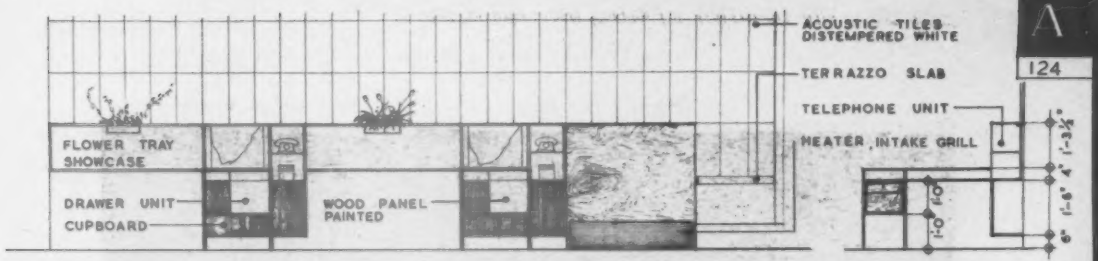
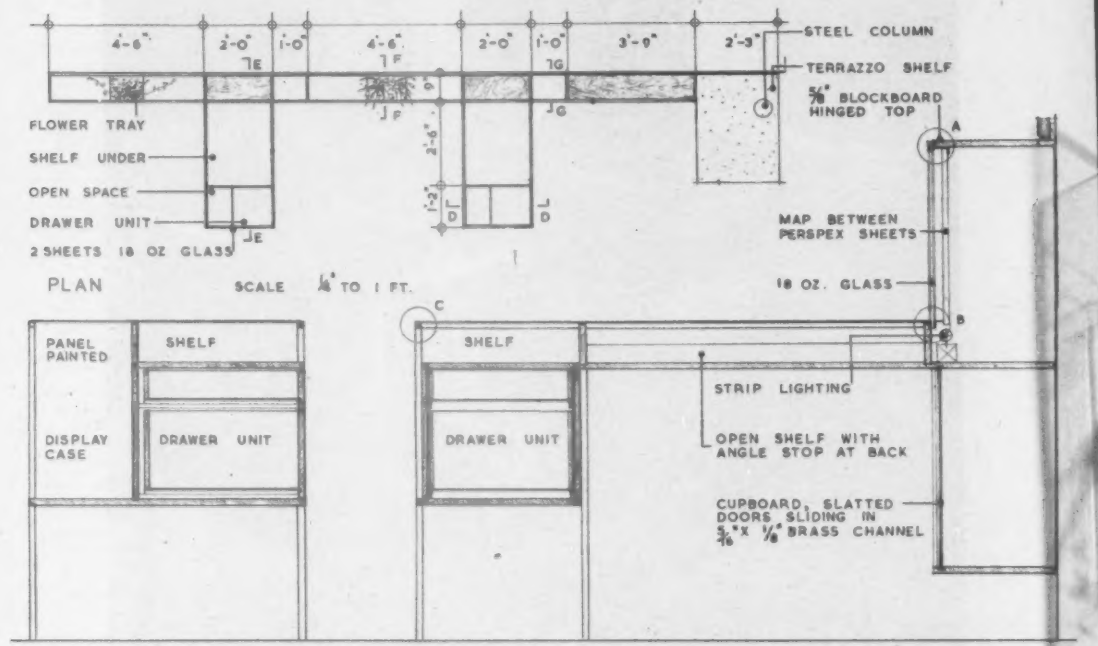
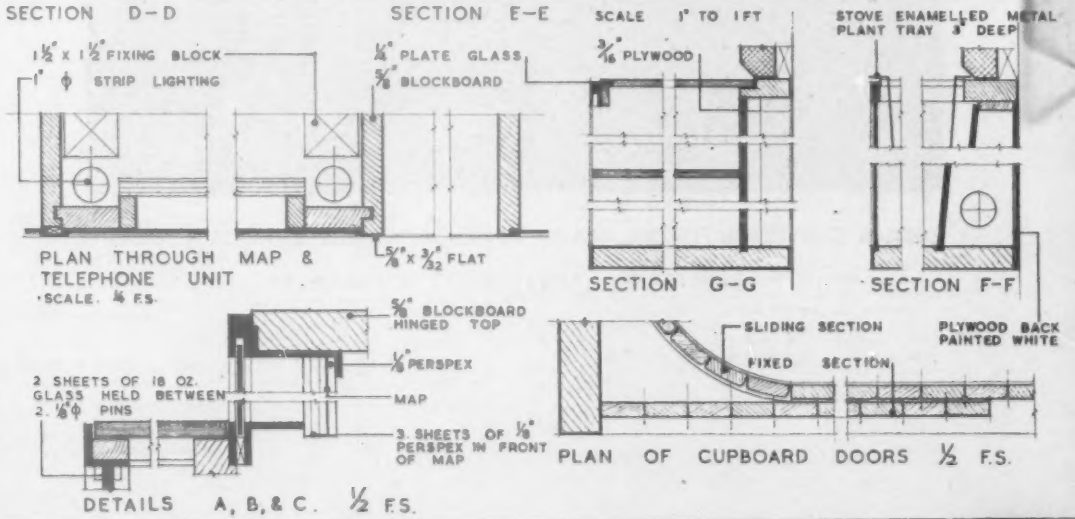
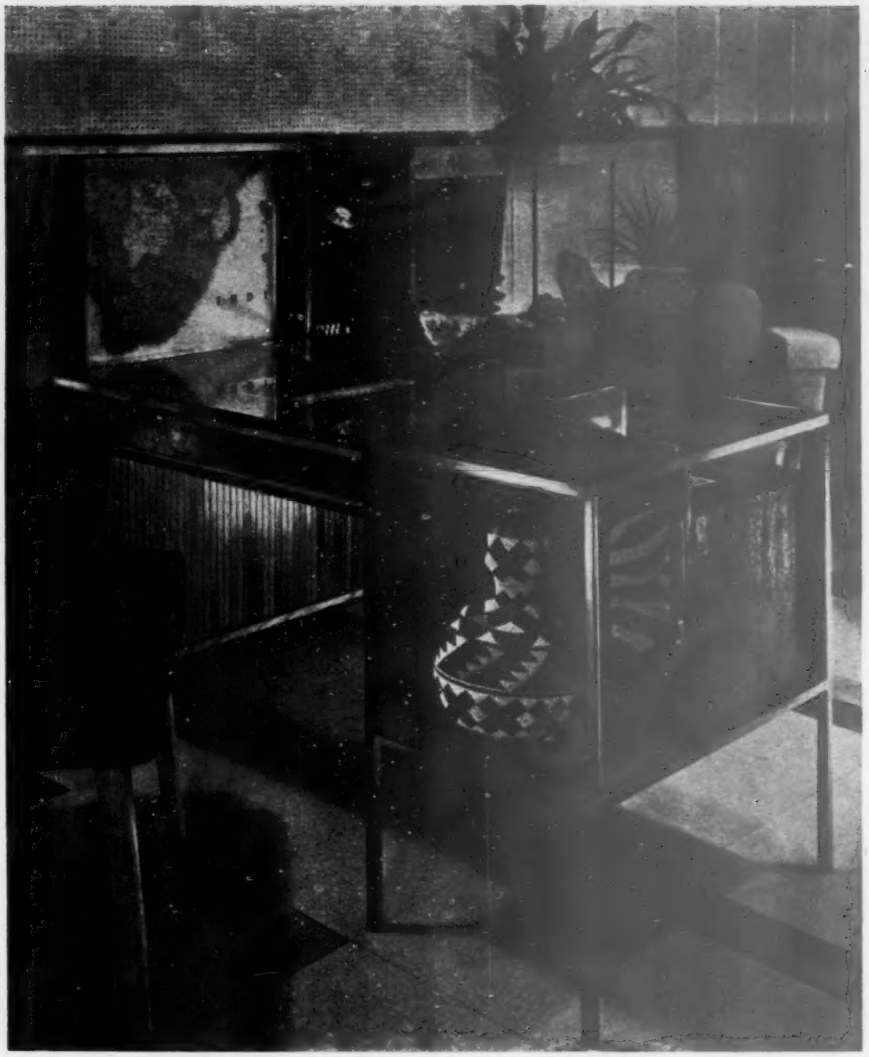

ACOUSTIC TILES DISTEMPERED WHITE
TERRAZZO SLAB
TELEPHONE UNIT
HEATER, INTAKE GRILL
FLOWER TRAY SHOWCASE
DRAWER UNIT
CUPBOARD
WOOD PANEL PAINTED
ELEVATION
SECTION


4'-6"
2'-0"
1'-0"
4'-6"
2'-0"
1'-0"
3'-0"
2'-3"
STEEL COLUMN
TERRAZZO SHELF
5/8" BLOCKBOARD HINGED TOP
FLOWER TRAY
SHELF UNDER
OPEN SPACE
DRAWER UNIT
2 SHEETS 18 OZ GLASS
MAP BETWEEN PERSPEX SHEETS
18 OZ. GLASS
PLAN
SCALE 1/4" TO 1 FT.
PANEL PAINTED
SHELF
DISPLAY CASE
DRAWER UNIT
SHELF
DRAWER UNIT
STRIP LIGHTING
OPEN SHELF WITH ANGLE STOP AT BACK
CUPBOARD, SLATTED DOORS SLIDING IN 5/16" X 1/8" BRASS CHANNEL
SECTION D-D
SECTION E-E


1 1/2" X 1 1/2" FIXING BLOCK
1" ϕ STRIP LIGHTING
1/4" PLATE GLASS
5/8" BLOCKBOARD
5/16" X 3/32" FLAT
PLAN THROUGH MAP & TELEPHONE UNIT
SCALE 1/4 F.S.
SCALE 1" TO 1 FT
3/16" PLYWOOD
SECTION G-G
STOVE ENAMELLED METAL PLANT TRAY 3" DEEP
SECTION F-F
5/8" BLOCKBOARD HINGED TOP
1/8" PERSPEX
2 SHEETS OF 18 OZ. GLASS HELD BETWEEN 2 1/8" ϕ PINS
MAP
3 SHEETS OF 1/8" PERSPEX IN FRONT OF MAP
DETAILS A, B, & C. 1/2 F.S.
SLIDING SECTION
FIXED SECTION
PLYWOOD BACK PAINTED WHITE
PLAN OF CUPBOARD DOORS 1/2 F.S.



DESK & SHOWCASE FITTING, SOUTH AFRICAN TOURIST BUREAU, LONDON

ARCHITECTS: JAMES CUBITT & PARTNERS

CURRENT MARKET PRICES (*Continued*)

DRAINAGE GOODS—*Continued*

GULLEY PARTS—	4 in.	6 in.	
Traps, high level, invert.	20/6	51/3	each
Inlet, bellmouth pattern	13/–	21/–	do.
Do. with one vertical branch.. ..	19/3	33/6	do.
Do. with two do.	45/–	81/–	do.
Sealed cover, with felt washer	9/–	15/6	do.

RAINWATER SHOES—	4 in.	6 in.	
With vertical inlet and rebated top ..	23/6	61/6	each
Extension piece, 6 ins. high	14/3	14/3	do.
Flat loose coated grating	2/6	2/6	do.
Loose solid coated cover	4/5.	4/5	do.

MANHOLE CHANNELS, WHITE GLAZED—

Each.	4 in.	6 in.	9 in.
Straight, 2 feet long	11/3	15/–	25/–
Taper, do.	18/9	–	26/3
Bends, Main, half section	20/–	30/–	48/9
Do., Branch, do.	13/9	18/9	–
Do. do. three-quarters do. ..	18/9	27/6	–
Junctions, single	17/6	30/–	–
Do. double	23/9	41/3	–

BROWN GLAZED CHANNELS—

Based on standard list plus 65% (less than 100 pieces)

	4 in.	6 in.	9 in.
Half-round main channel (2 ft. long) ..	2/3	3/4	6/–
Extra for stop ends	2/3	3/4	6/–
Extra for outlets	2/8	2/8	2/8
Channel bends with splayed ends ..	6/8	10/–	18/–
Three-quarter section do.	8/11	13/4	24/–

MANHOLE COVERS—	Black	
24×18 in. Light foot traffic	24/–	each
Do. Strong do.	39/6	do.
Do. Light car traffic	80/6	do.
Do. Road traffic	113/–	do.

SUNDRIES—	Galvanized	
Manhole steps	– 7/3	each
4 in. Mica valve fresh air inlets (L.C.C.)	– 15/–	do.
Plumber's hemp	– 7/6	per lb.
Gaskin, caulking	– 1/9½	do.
Canvas backed hair felt, 4 in. wide ..	– 7*d.*	per ft. run

ROOFING MATERIALS

WELSH SLATES (delivered)— Size in inches	5,000 lots at per 1,000	Up to 500 lots at per 100	Under 100 at per doz.
22×11	1473/–	190/–	25/3
20×10	1229/–	159/–	21/–
18×10	953/–	123/–	16/3
16×8	657/–	85/–	11/3
14×9	565/–	73/–	9/6
14×4½	268/–	35/–	4/6

TILES (Broseley and Staffordshire)—	5,000 lots Per 1,000	Per 100
10½"×6½" Machine made	225/–	32/–
Do., hand made, sand faced..	261/–	37/–
Hips, valleys and angles	27/9 per dozen	
	Per 1,000	Per 100
Plain concrete tiles	160/9	19/6

QUARRY TILES (delivered)—	¾"×6"×6"	1¼"×8"×8"	
Plain	262/9	1010/–	per 1,000
Sheeting asbestos corrugated, 3 in. pitch ..		7/6	per yard super
Do. 6 in do. ..		8/–	do.
Sheeting iron galvanized corrugated		53/–	per cwt.
3½" Drive screws (galvanized)		9/6	gross

ASBESTOS RAINWATER GOODS—

	2½ in.	3 in.	4 in.	6 in.	
Pipe in 6 ft. lengths ..	3/–	3/7	4/11	10/2	yd. lineal
Do. in 4 ft. or 3 ft. do. ..	4/6	5/5	7/4	15/3	each
Shoes	1/11	2/3	3/3	8/1	do.
Branches	3/5	4/1	5/8	14/1	do.
Bends	2/3	2/9	4/–	8/10	do.
Swannecks—6 in. projection	3/–	3/3	4/9	10/5	do.
Pipe clips	1/4	1/4	2/4	2/8	do.

ASBESTOS O.G. GUTTERS AND FITTINGS—

	4 in.	5 in.	6 in.	8 in.	
In 6 ft lengths	2/10	3/7	4/5	5/8	yd. lineal
In 4 ft. or 3 ft. do. ..	4/2	5/6	6/7	8/6	each
Angles and nozzles ..	2/3	3/–	3/7	4/7	do.
Stop ends	7*d.*	9*d.*	11*d.*	1/3	do.
Drop ends	1/11	2/2	2/9	3/9	do.
Union clips	1/2	1/7	1/11	2/3	do.

STONE

PER FOOT CUBE in random blocks not exceeding 20 ft average in each.
BATH STONE F.O.R. SOUTH LAMBETH—
Monks Park 5/11. St. Aldhelm 6/11
STONE F.O.R. NINE ELMS—
Portland brown Whitbed 6/8½ Beer 8/10
Over 20 ft. average cube blocks extra cost.

TIMBER

Softwood—sawn—random lengths.

	Per Standard.	Per cubic foot.		
Carcassing quality	£105	12/8½		
Joinery quality	£115 and up	13/11½		
Plain edged unsorted flooring,	¾ in.	1 in.	1¼ in.	1½ in.
per square	85/–	110/–	140/–	165/–
½ in. insulating wall board (600 yards)		3/1 yard super.		

Larger quantities cost less, and smaller quantities more.

SUNDRIES—

Felt, roofing and inodorous (best) .. .. .. 2/10½ yard super
Do., inodorous, 2nd quality and sarking .. 2/2 do.
Do., sheathing, black .. .. 1/7 do.
Glue .. .. 1/10 per lb.. Glass paper .. 4/6 per quire
Nails: brads (2½") .. 49/6 cwt. Cut clasps (2½") 51/9 per cwt.
Panel pins .. 9*d.* per lb. Sash line, cotton (No. 8) 183/6 per gross
Wall boards Up to 9 sheets
Insulating, ½" .. .. 6*d.* per sq. ft.
Hardboard: ⅛" .. [illegible]*d.* and ¼" .. 8½*d.* per sq. ft.
Slag wool .. .. 3/6 foot cube
Wood screws: 1½" long—No. 8 size—per gross: Steel 2/8
Japanned round head 3/5. Brass 9/–. Brass round head 16/5

HARDWOOD—

Prime	Per foot super. ½ in.	¾ in.	1 in.	2 in.
Mahogany (African)	1/3	1/9	2/–	4/4
Do. (Honduras)	2/2	3/1	3/5	7/–
Oak (American), white—northern —plain, kiln dried	1/0½	1/5½	1/8	3/9
Do.—Quartered	1/1½	1/7	1/10	4/4
Do.—European—	1/8	2/4	2/7½	5/5
Teak—Burma and Siam 1st class	2/4	3/3	3/9	7/5
Walnut (African)	1/3	1/9	2/–	4/4

QUALITY, STANDARD SOFTWOOD DOORS.

1½ins., 4 Panels, horizontal, moulded both sides, in quantities of from 12 to 49.

2′ 9″×6′ 6″ at 58/6 each.	2 ins. do., but top panel open, with beads.		
2′ 6″×6′ 6″ at 55/3 each.	2′ 9″×6′ 6″ at 71/– each	2 ins. 3 panel, do. as last.	
2′ 3″×6′ 6″ at 52/9 each.	2′ 6″×6′ 6″ at 67/3 each.	2′ 9″×6′ 6″ at 65/9 each.	2 ins., 2 panel ditto as last.
2′ 0″×6′ 6″ at 50/3 each.		2′ 6″×6′ 6″ at 63/3 each.	2′ 9″×6′ 6″ at 60/– each.
			2′ 6″×6′ 6″ at 57/– each.

CURRENT MARKET PRICES (Continued)

IRONMONGERY

	2 in.	3 in.	4 in.	5 in.	6 in.
Cast iron Butts .. per pair	10*d.*	1/4	2/1	3/8	5/5
Hinges, spring, single action regulating, japanned each	–	6/9	9/–	12/–	15/–
Do. but double action spring only .. .. each	–	12/–	15/6	22/9	27/9
Do. blank only .. each	–	5/6	9/6	12/9	16/6

	12 in.	18 in.	24 in.	30 in.	36 in.
Tee hinges (japanned) per pair	1/5	2/8	–	–	–
Do. but stronger per pair	1/11	3/8	5/8	–	–
Hook and Ride hinges per pair	–	–	10/7	13/–	19/9

BOLTS—each—	3 in.	4 in.	6 in.	8 in.	10 in.	12 in.
Cabinet, barrel, straight or necked	1/2	1/6	1/11			
Square spring, with brass knob	1/2	1/6	1/11			
Tower bolts		1/4	1/10	2/6	3/1	3/8
Barrel bolts		2/1	3/1	4/1	5/2	6/3
Add to Tower or Barrel bolts if necked		4*d.*	4*d.*	5*d.*	5*d.*	5*d.*

LOCKS—each—			
Rim lock, 2 lever, wrot case brass bolt and bushing	11/5	Brass furniture .. or Bakelite do.	4/2 3/1
		Bakelite finger plates	2/1
Mortice lock, 2 lever, bushed	14/4	Brass furniture .. or Bakelite do.	6/8 3/7
Cylinder latches, japanned case	15/6		
Brass sash fastener .. .. each			4/–
Casement fasteners (malleable) .. .. .. do.			1/6
Do. stays (do.) .. .. do.			2/–
Axle pulleys (brass face, iron wheel) .. .. each			2/6
Do. as last, but with brass wheel .. .. each			4/3
Sash line, No. 8 Anchor yellow label .. per yard			10½*d.*

METAL GOODS

Basis—Rolled steel joists, all sections from 5″×4½″ to 16″×6″ inclusive (except 9″×7″, 10″×8″, 12″×6″ and 14″×8″) (over one ton)	£24 . 0 . 0 per ton
Extras—9″×7″ section	5/– do.
4″×4″, 5″×3″, 10″×8″, 12″×8″, 14″×8″ and 16″×8″ to 20″×7½″ sections inclusive	10/– do.
22″×7″ section	15/– do.
4″×2½″, 4″×3″, and 24″×7½″ sections	20/– do.
Steel angles and tees	£25.0.0 do.
Steel bars (average ex mills)	£25.0.0 do.
Mild steel rods ⅜″ diameter and upwards, cut to lengths within the usual margin and bent to normal schedules for reinforcement	30/6 per cwt.
Extras per ton—	
⅜ in. and ½ in. diameter in size	15/– per ton
⅝ in. do. do.	15/– do.
¾ in. do. do.	22/6 do.
⅞ in. do. do.	30/– do.
1 in. do. do.	60/– do.
1¼ in. do. do.	90/– do.
Extras for length—	
5 ft. to 3 ft.	7/6 do.
3 ft. to 2 ft.	15/– do.
2 ft.	22/6 do.
40 ft. to 45 ft.	15/– do.
45 ft. to 50 ft.	22/6 do.
Bolts and nuts	75/– per cwt.
Trench covering, including trays 1½ in. deep and rebated frames, 9 in. wide	9/– foot run
Do., but 12 in. wide	12/– do.
Do., but 14 in. wide	13/– do.
Do., but 18 in. wide	14/6 do.

METAL WINDOWS AND DOORS—

Steel casement doors and frames for glazing	8/– foot super
Do. folding type	7/6 do.
Fireproof steel framed doors	30/– do.
Strong room doors	65/– do.
Strong room gates	30/– do.
Steel casement windows and frames part opening	6/– do.

CHAIN LINK FENCING—

In 25 yards lineal rolls inclusive of line wire.

2 in. mesh.	Height in inches— 36	42	48	60	72
10½ Wire gauge	74/9	87/3	99/9	124/5	149/6
12½ do.	52/7	61/4	70/1	87/8	105/2
14½ do.	37/7	43/10	50/1	62/7	75/2

DOUBLE SOOT DOORS AND FRAMES—

Fitted with brass turnbuckle and cast key ..	9in. × 9in.	12in. × 9in.	14in. × 12in.
	14/3	18/–	29/–

SLIDING DOORS, GATES AND PARTITIONS—

Factory sliding doors in two leaves containing about 100 square feet with mild steel angle frames covered with 24 gauge corrugated galvanized sheeting and including hanging tubular track and gear complete	8/6 foot super
Factory entrance gates with mild steel frames clad with 2 in. mesh chain link complete	6/9 do.
Steel partitioning, glazed (rough cast) and stove enamelled	10/6 do.

STEEL ROOF LIGHTS—

Lanterns with vertical sides, and hipped roof, glazed with ¼ in. cast glass and lead flashed (180 ft. super or over, all surfaces measured)	11/– foot super
Skylights of similar construction (180ft. super or over, all surfaces measured)	10/– do

DOMESTIC BOILERS

For hot water or heating, for use with solid fuel, including base plates.

Gal. per hour from 40 to 140 deg.	Heating only direct radiation sq. feet	Black finish £ s. d.	Vitreous enamel finish £ s. d.	Vitreous enamel side jackets s. d.
20	–	5 12 3	6 16 3	10 0
20	55	7 11 0	9 19 9	11 3
25	70	8 16 0	11 4 6	13 6
40	110	13 18 6	16 17 0	16 0
49	120	12 5 0	–	–
66	170	15 3 6	–	–

Radiators for heating—3/– per sq. foot heating surface.

GAS, WATER AND STEAM TUBES

(From Standard List.)

Internal Diameter—	¼in. & ⅜in.	½in.	¾in.	1in.	1¼in.	1½in.	2in.
Tubes .. per ft.	4*d.*	4½*d.*	5½*d.*	6½*d.*	9½*d.*	1/1	1/4½	1/10
Bends .. .. each	8*d.*	9*d.*	11*d.*	1/2	1/7½	2/7½	3/2	5/2
Elbows, square do.	10*d.*	11*d.*	1/1	1/3	1/6	2/2	2/7	4/3
Elbows, round do.	11*d.*	1/–	1/2	1/5	1/8	2/4	2/10	4/8
Tees .. .. do.	1/–	1/1	1/3	1/7	1/10	2/6	3/1	5/–
Crosses .. do.	2/2	2/4	2/9	3/3	4/1	5/6	6/7	10/8
Backnuts .. do.	2*d.*	2*d.*	3*d.*	3½*d.*	5*d.*	6*d.*	8*d.*	1/1
Sockets .. do.	3*d.*	3*d.*	4*d.*	5*d.*	6*d.*	8*d.*	10½*d.*	1/3
Sockets, diminished do.	4*d.*	5*d.*	6*d.*	7*d.*	9*d.*	1/–	1/4	2/–

DISCOUNTS OFF ABOVE

In random lengths and in quantity.

TUBE—

Class A (light)	−37½%	Black	−10% Galvanized
Class B (heavier)	−31½%	Do.	− 5% do.
Class C (heaviest)	−21½%	Do.	+ 8½% do.

FITTINGS—

Light weight	−11½%	Do.	+ 8½% Galvanized
Heavy do.	−3½%	Do.	+13½% do.

RAINWATER GOODS (Painted or Unpainted)

		2 in.	2½ in.	3 in.	3½ in.	4 in.	5 in
	per yard	2/8	2/9½	3/1½	3/6½	4/1½	5/4½
Shoes	each	1/1½	1/3½	1/6	2/–	2/3	4/0½
Bends	each	1/3½	1/6	1/10½	2/3	2/8½	4/10
Heads	each	1/10½	2/1½	2/6	3/0½	3/4½	6/0½
Offsets, 4½ in. projection	each	1/7½	2/–	2/3	2/6½	3/3	5/7½
Do. 9 in. do. ..	each	2/1½	2/4½	2/9½	3/6	4/2½	6/7½
Single junction ..	each	1/11½	2/3½	2/9½	3/3	/11½	6/3½
Half round gutters, 6 ft. lengths,	per yard	–	–	1/3½	1/5	1/5½	1/10
Angles and nozzles ..	each	–	–	1/0½	1/2½	1/3½	1/7½
Stop ends	each	–	–	3½*d.*	3½*d.*	5½*d.*	7½*d.*
O.G gutters, 6ft. lengths	per yd.	–	–	1/8½	1/10½	1/10½	2/5½
Angles and nozzles ..	each	–	–	1/5½	1/5½	1/6	2/–
Stop ends	each	–	–	4½*d.*	5½*d.*	6½*d.*	9*d.*

The above prices plus 7½% added to foot of invoice.

CURRENT MARKET PRICES (*Continued*)

PLASTERING MATERIALS

Sand, lime, cements and various plasters are previously included under those heads—

Metal lathing (⅜" × 24G.)	2/6 sq. yard
Plaster baseboard, ½" (150 yds.)	2/1½ do.
Plaster wallboard, ½" (do.)	2/6½ do.
Scrim, 2" cotton (100 yds. roll)	6/11 per roll
Scrim, 3½" jute (do.)	10/7 do.
Lath nails, galvanized	1/1½ lb.
Cow hair	84/6 per cwt.
White glazed tiles (6" × 6" × ¼")	16/9 sq. yard
Do. rounded on one edge	20/– do.
Do. on two adjoining edges	24/6 do.

PLUMBER'S GOODS

Per cwt. Delivered in quantities of	3½ lb. lead and upwards	Lead pipes in coil	Lead soil pipes	Allowance for old lead
5 Cwts. to 1 Ton	158/3	159/6	162/6	100/–

IRON SOIL AND WASTE PIPE—

	2 in.	2½ in.	3 in.	3½ in.	4 in.
L.C.C. coated (M) per yard	3/1½	3/4	3/8½	4/2½	4/9½
Bends each	2/3½	2/6½	2/9½	3/6	3/11½
Swannecks, 4½" projection, do.	2/9½	3/3	4/5½	5/1½	5/11½
Do. 9 in. do. do.	3/9	4/2½	5/1½	5/11½	7/–
Junctions do.	2/9½	3/6	4/2½	4/10½	5/7½
Round access doors do.	5/3	5/3	5/3	5/7½	5/7½

The above prices plus 78½% added to foot of invoice.

GALVANIZED CISTERNS—

(Less than four)		100	200	300 gallons
Angle iron at top and corner plates	14 gauge	122/–	225/–	313/6
	12 do.	147/3	248/–	336/6
	8 in. plate	171/9	281/–	388/–

HOT WATER TANKS—

		25	30	50 gallons
Riveted with ring	12 gauge	94/–	103/–	143/–
	8 in. plate	103/–	112/–	159/–

CYLINDERS—

		25	37	48 gallons
Riveted and hand-hole	12 gauge	121/–	142/–	166/–
	8 in. plate	134/–	158/–	185/–

PLUMBERS' BRASSWORK—

(Good Quality)

	½in.	¾in.	1in.	1¼in.	1½in.	2in.
	Each					
Ball valve, equilibrium, M.W.B. pattern, with union, copper ball	21/1	28/3	39/1	66/9	101/–	166/–
Do., Croydon, M.O.H. pattern, low pressure	10/3	15/1	25/–	44/6	54/9	91/–
Bib valve, polished brass, crutch top, S.D. for iron	8/3	12/8	–	–	–	–
Do., chromium plated, easy clean, spoke top, lettered S.I.	11/9	16/5	–	–	–	–
Elbow back plate for tap: in brass	7/–	11/6	–	–	–	–
chromium plated	8/–	12/6	–	–	–	–
Do. brass with union for lead	9/–	13/–	–	–	–	–
Do., but chromium plated	12/–	14/–	–	–	–	–
Stop valve, brass, screw down crutch top, for iron	7/3	10/10	18/–	36/–	53/–	82/–
Do. but unions for lead	10/–	14/6	27/6	40/–	64/–	128/–
Gun metal gate valves	12/3	16/–	19/6	25/6	33/9	47/3
Waste outlet, washer, plug, chain stay and union	–	–	–	9/6	10/6	19/–
Boiler screw, brass, double nuts	2/–	2/6	4/–	6/–	–	–
Plumbers' union, brass, lead to iron	2/9	3/9	5/6	8/3	10/6	19/3
Inspection cap and screw, brass	–	–	2/–	2/3	2/9	3/9
	1¼ in.	1½ in.	2 in.	3 in.	4 in.	
Brass tail pieces, 4" long	–	2/6	3/4	6/–	8/10	
Do. 6" long	–	4/–	5/5	7/6	11/6	
Brass thimble	–	3/3	4/–	6/6	8/6	
Double lead tacks	1/4	1/6	1/9	4/8	7/–	
Lead, 7 lb. P traps, 1½" seal	7/1	9/3	13/1	–	–	
Lead, S do., as last	8/9	11/5	16/1	–	–	
Galvanized wire guards	–	–	1/6	1/7	1/8	
Copper do.	–	–	2/4	2/6	2/8	

Solder: Plumber's 4/– lb.; Blowpipe 5/– lb.

Pipe lagging, 24 feet × 4 in. 4/6 per roll

Boss white jointing compound 2/– 1 lb. tin

Gaskin, 1/9½ lb. Long dressed hemp, 2/3 per ½ lb. hank.

COPPER TUBES—Extract from B.S. 659/1944—

Internal work (semi hard). 3 Cwt. lots.

Nominal bore.	Outside diameter inch.	Gauge.	Weight lb. per ft.	Price per lb. pence.	Price per ft. pence
⅜ in.	0·596	19	0·27	37½	10·23
½ in.	0·846	19	0·39	36½	14·29
1 in.	1·112	18	0·62	35½	21·86
1¼ in.	1·362	18	0·76	34½	26·41
1½ in.	1·612	18	0·91	34½	31·63
2 in.	2·128	17	1·40	36½	50·58

CAPILLARY TYPE CONNECTIONS—

All ends copper to copper.

Each.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Straight	1/11	2/8	4/3	5/7	7/6	10/9
Bends	5/–	6/2	8/10	12/1	19/–	26/8
Tees	4/7	5/4	9/1	12/8	18/–	26/8
Brackets (brass)	2/2	2/5	2/10	3/–	3/5	4/5

GLASS

English flat drawn Sheet Glass in squares, cut to size

Per foot super.	Ordinary Glazing Quality
24 oz., do.	5½d.
26 oz., do.	7½d.
32 oz., do.	9½d.

Prices shown for Figured, Rolled and Cathedral, Rolled and Wired and Prismatic apply to quantities over 500 feet super.

Figured, Rolled and Cathedral glass, cut to size, per foot super: White 7½d. Tinted 10½d.

Prismatic glass, cut to size 1/3 per foot super

Rolled and wired glass, cut to size, per foot super:

⅛" Rolled	7½d.
7/32" or ¼" do.	8½d.
7/32" or ¼" Rough cast	8½d.
¼" Wired, rolled or cast	9½d.
Georgian wired cast	10d.
White Muffled	2/3
Fluted (No. 4)	10½d.
Feathered	10½d.

POLISHED PLATE GLASS, cut to sizes, ordinary substance approximately ¼ in. (Tariff)

Per foot super.	General Glazing	Selected Glazing Quality	Silvering Quality
In plates not exceeding			
2 feet super in each	2/8	2/10	3/4
3 feet do.	3/–	3/5	4/1
5 feet do.	3/2	3/10	4/7
45 feet do	3/9	4/1	5/7
100 feet do.	4/5	5/7	7/2

Extra sizes, i.e., plates exceeding 100 feet super in each, or 160 inches long, or 96 inches wide, at higher prices.

PAINTS AND VARNISH

	Price	Unit
Aluminium	35/9	Gallon
Dryers	24/–	Gallon
Distemper, washable (best)	90/–	Cwt.
Enamel, best white	57/–	Gallon
Knotting	27/6	Gallon
Gold Paint	86/6	Gallon
White Lead	187/–	Cwt.
Linseed Oil, boiled (5 gallon lots)	19/9	Gallon
Do. raw (do.)	19/3	Gallon
Mixed Paint (white lead)	60/6	Gallon
Putty	54/9	Cwt.
Size	9/3	Firkin
Tar	2/–	Gallon
Terebine	18/–	Gallon
Japan	21/6	Gallon
Varnish, hard oak	33/6	Gallon
Do. copal	34/–	Gallon
Do. flat	34/–	Gallon
Whiting Gilders	9/3	Cwt.
Petrifying liquid	6/6	Gallon
Solignum	8/–	Gallon
Creosote	2/–	Gallon
Ceiling Distemper	32/–	Cwt.
Turpentine substitute	4/9	Gallon
Bitumen Solution	8/3	Gallon
Paperhangers' Paste	33/–	Cwt.

News of the BUILDING INDUSTRY

INTEREST

THE COUNCIL FOR CODES OF PRACTICE FOR BUILDINGS has now issued for comment Code 403, "Open Fires, Heating Stoves and Cookers Burning Solid Fuel," prepared for the Council by a Committee convened by the Royal Institute of British Architects.

The Code deals with the selection and installation of the various types of heating appliance using solid fuel normally found in dwellings, and with the necessary builder's work. The appliances dealt with are open fires, openable stoves and solid fuel cookers, with or without back boilers for domestic hot water supply and space heating.

The Code contains general guidance on the selection of appliances and on the choice of ancillary materials. Particular recommendations are given in regard to each kind of appliance.

The design section of the Code concludes with information on gravity warm air heating. The text makes reference to the many diagrams which are included in the document.

The Code is in draft form and is subject to amendment in the light of comments which should be submitted by May 15, 1951. Copies may be obtained from the British Standards Institution, 24/28 Victoria Street London, S.W.1, price 7/- post free, reference CP (B) 1006.

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THOMAS DE LA RUE & CO. LTD. will be holding a private exhibition of their products at the galleries of the Royal Society of Painters in Water Colours, Conduit Street, W.1, from July 2 to July 19.

This will be the first time that products representative of all the company's activities in security printing, stationery, plastics and the gas industry have been brought together under one roof. From the factories of the Industrial Group there will be examples of the company's work in laminated and extruded plastics and gas appliances.

Admission to the exhibition will be by invitation. The Security Division will be open to visitors from July 2 to July 4 and the Industrial Division from July 5 to July 19.

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USED STEEL SCAFFOLDING is included in a new list of goods which from April 16 have to be covered by export licences to all destinations. Other materials included in the changes announced by the Board of Trade are iron and steel in various forms, mixtures of specified abrasives, and certain chemicals.

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THE FEDERATION OF BRITISH INDUSTRIES have sent the following letter to the Rt. Hon. Alfred Barnes, M.P., Minister of Transport:

On behalf of productive industry the F.B.I. wishes to lodge the strongest protest against the decision to increase railway freight charges from Monday next. You have already been made aware of the great anxiety with which industry reviews the steady increase in public freight charges which adds to industrial costs and must in many cases increase prices. It has also been made clear to you that in the view of industry the almost automatic passing on to industrial traffic of the increasing cost of the British Transport Commission is not the way in which the problem should be solved. There is general regret that the recent wages award was not definitely linked with the attainment of greater efficiency, in spite of the unanimous recommendation to that effect by the Court of Inquiry, whose findings were thus overridden.

The mere passing on of increased costs to the tranport user will not of itself remedy the basic problem of the railways, for traffic will continue to drift from the railways to other means which will provide cheaper rates and more efficient service. The inevitable consequence in the long term will be continuing need to underpin the railway finances by large and continuing subsidies at the cost of the taxpayer. A further result is that the situation steadily worsens for those industries which are by their nature tied to rail transport.

Despite the increased charges industry considers that the railways do not serve the trader as well as in pre-war days. Service is less prompt and efficient, transit times are generally longer and there has been greater damage to goods through pilferage and carelessness since the war. There is much evidence of excessive staffing, duplication of management and a continued retention of superfluous and uneconomic facilities.

The Federation's Transport Committee have given close thought to this problem in recent months and are agreed that its views ought to be made known to you and to the public generally. Its conviction is that a great deal of traffic which has left the railways in recent years will never return. Much of the road transport organisation of the country has now become integrated into the structure of industry and commerce, for many of whose traffics road transport is a cheaper, more efficient and more convenient medium. To place any limitation on this wholly natural and proper development would in the end lower the efficiency of industry and raise production costs. Nevertheless there is doubtless a proportion of the traffic which would return to rail if the railways took the necessary steps to give improved service at lower costs.

The right policy must surely be for the railways to concentrate on those services which they can perform more efficiently than other means of transport. Uneconomic and redundant facilities, including little-used branch lines and stations, should be given up. A use of modern methods of work study would, we are convinced, disclose further ways in which railway costs per unit of traffic handled could be lowered and charges reduced.

Many industries have had to accept the challenge of rising costs and have overcome them by increasing efficiency. Much has been said by Ministers of the improvements made in industrial efficiency or recent times. We have yet to see evidence of comparable improvements in the railways.

Finally on behalf of the productive industry of the country we urge you as the responsible Minister to use your influence to the utmost to secure more rapid and effective progress on the broad lines indicated.

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A "MODERN BUILDING" EXHIBITION at Little Roodee, Chester, from June 22-30 is to be staged by the M.o.W. in conjunction with the Building Industry.

The Exhibition will cover an area of 200,000 square feet, with framed canvas pavilions and a special demonstration area for mobile and heavy plant.

Any manufacturer of mechanical aids who wishes to avail himself of the limited stand space not yet allocated, should write immediately to: The Chief Plant Adviser, Ministry of Works, Lambeth Bridge House, London, S.E.1.

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A DRAFT REVISION OF B.S. 644, part 1, wood casement windows, has been issued in printed form.

This revision, undertaken by the B.S.I. in conjunction with E.J.M.A., aims at improving the general durability of the casement windows covered by the 1945 edition of B.S. 644.

No agreement has been reached on a standard for types of adhesives. Investigation on this matter continues.

The range of types and sizes of window has been simplified. The standard now covers the following three types:

(a) with horizontal and vertical glazing bars;
(b) with horizontal or "lay bars" only;
(c) without glazing bars.

Casement doors and frames have been omitted as suitable doors and frames are included in B.S. 459 and 1567.

The range includes five window sizes: 1 ft. 5½ in. × 2 ft. 6½ in. high; 2 ft. 1½ in. × 3 ft. 6½ in. high; 4 ft. 0½ in. × 4 ft. 0½ in. high; 5 ft. 11½ in. × 4 ft. 6½ in. high; and 7 ft. 10½ in. × 5 ft. 0½ in. high.

In future all E.J.M.A. Standard Casements will be made to the new specification.

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THE QUASI-ARC COMPANY LIMITED, of Bilston, Staffs, are arranging a one week full time course on the "Design of Welded Structures" at Bilston, commencing May 21, 1951.

The Course is for structural designers and draughtsmen already familiar with structural design methods. Lectures will be given by Members of the Technical Staff on Design of Trusses, Welded Plate Girders and Built up Columns, Portal Frames and Building Frames, Physical Properties of Welds, Estimating and Costing of Arc Welded Work, as well as the Practical and Metallurgical aspects of Arc Welding which affect the design of structures.

Attendance for the course is restricted and application should be made to the Constructional Design Department, The Quasi-Arc Company, Limited, Bilston, Staffs, who will supply full information.

The Company announce that they have produced a new 16 mm. sound and colour film "Arc Welding", running time about 20 minutes.

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THE DESIGN AND CONSTRUCTION OF A LARGE SPAN PRESTRESSED CONCRETE SHELL ROOF is the subject of a paper by Lt.-Colonel G. W. Kirkland, M.B.E., and Mr. A. Goldstein, to be given on April 26 at the Institution of Structural Engineers, 11 Upper Belgrave Street, London, S.W.1.

This meeting has been transferred from April 12. The meeting originally scheduled for April 26 is postponed to May 17.

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THE MAXIMUM PRICE of weak sulphuric acid (77% H_2SO_4) is increased by 27s. 6d. per ton.

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C. S. ALLOTT & SON have taken into the partnership Mr. Arnold Bailey, A.M.I.C.E., and Mr. Stanley Gleaves, M.I.STRUCT.E.

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SYNTHETIC RESIN ADHESIVES and their uses in (a) the woodworking industries, and (b) the engineering, electrical, manufacturing and allied trades are to be the subject of courses at a proposed summer school organised by Aero Research Limited, Duxford, Cambridge. The courses will run from September 23-29, 1951. The fee will be 10 guineas. Application forms and syllabus cards will be sent by the organisers on request.

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THE DIRECTORS OF WOLF ELECTRIC TOOLS LIMITED announce the death on April 3 of Mr. Sidney Wolfe, who was in his 80th year and founded the Company in 1900.

As a specialist in sheet metal working machinery in his younger days, he saw the future possibilities of portable electric tools.

GOOD, BAD OR INDIFFERENT?

No. 32—By A. FOREMAN

Cold Water Storage

I have lately been replacing some cold water cisterns.

Why is it that, when forming the access trap to the roof space in which a cold water storage cistern is to be placed, so many builders make them too small to pass through a replacement cistern. It makes so much extra work and expense at some later time, as sooner or later every cistern has to be replaced. I have found from experience that the opening should provide a *clear* space of at least 2 ft. 6 in. by 2 ft. 3 in. which will take cisterns up to an actual capacity of 80 gallons, but it is better that they are considerably larger. Incidentally I wish we could develop the habit of referring to water containers of all sorts by "actual capacity" instead of the more common "nominal capacity" as the two are so greatly different and the actual amount of water is what concerns the user.

Another point about tank rooms, or roof spaces so used, is the need for sufficient space between the top of the cistern and the roof or ceiling in which to work and adequate clearances near connections in which to operate tools.

I know that it is the practice in some parts of the country to have no cold water storage except to feed hot water systems. While I appreciate that there are some advantages in adopting this arrangement, I feel that on balance almost everything is in favour of having a really adequate store of cold water to feed all fittings, excepting that provision for drawing drinking water directly from the main is desirable. The drinking water requirement should be met by providing a tap at the kitchen sink in dwellings and a tap at some convenient point on each floor in larger buildings. I realize that most people tend to drink water from any cold tap although this is undesirable if it comes from a source which has been stored or passes through a storage tank which may not be cleaned out very frequently. The right thing to do is to mark all taps fed through storage as "not for drinking" although I don't think even this will stop householders from drinking water from bathroom taps, nor hotel visitors from doing the same from taps to basins in their bedrooms.

One of the main reasons for having cold water storage is that, with the increasing demand for water during peak demand periods, a great strain is put on the supply companies' systems which makes the maintenance of even pressures difficult if not impossible. To maintain reasonably even pressure would need uneconomically large mains in areas which have heavy concentrations of population. There are also the occasional supply failures due to repairs which, without storage, leave buildings without water for all essential purposes such as cooking, cleaning and sanitation which is most undesirable.

Cold water storage should provide at least half a day's normal needs of each building; most supply companies usually have bye-laws regulating the amount of storage. The new M.O.H. Model Water Bye-laws suggest 25 gallons as a minimum and, where there is a hot water system, this is increased to 50 gallons; presumably these mean "actual capacity" and not "nominal" as has been common practice. Even when fittings are supplied with cold water from the mains the storage for the hot water system should certainly not be less than 25 gallons. The demand for water varies enormously but as a general guide storage should be based on providing daily at least 30 gallons per head in houses and 20 gallons in flats although I have heard of instances where recorded consumption is as high as 60 gallons per head.

The overall sizes for galvanized mild steel cisterns in B.S.417 having actual capacities of 50 gallons are 3 ft. 0 in. × 2 ft. 0 in. × 1 ft. 9 in. or 2 ft. 6 in. × 2 ft. 0 in. × 2 ft. 0 in. In my experience only Grade A quality (14 B.G. for 50-gallon size) are worth buying as the additional length of life seems to be proportionately much greater than of Grade B.

The pressure in the supply mains is apt to fluctuate considerably and often the variation is greater than can be taken care of by the normal ball-valve in a W.C. flushing cistern so that it either overflows at some periods or does not fill sufficiently at other times. Feeding through a storage cistern provides a maximum variation of pressure of about 2 ft. head of water and, except in very tall buildings, all high pressures are avoided. Any small water heating appliance should always be fed through a cold-water storage tank in order to maintain an even water pressure.

By the way, it is a requirement in some areas, and it is a very desirable request, that the cold feed to taps on basins and baths should be separate from the feed to ball-valves to W.C.'s.

Control of the cold-water system is important. There should be a screw down stop-cock on the rising main soon after it enters the building but care should be taken to place it in an accessible position and to mark it. It order to facilitate repairs and washer changing there should be a screw down stop cock either where the cold supply leaves the tank or better in an accessible position without having to enter the roof space, but in larger buildings more localized controls of the distributing system are essential in addition to main controls.

The height of the cold cistern above any appliance to be served, controls the water pressure to that appliance and it is desirable to have at least 4 ft. head of water to any ball-valve if they are to work efficiently. If and when 7 ft. 6 in. ceiling heights are used this point will want watching in order to get sufficient head to ensure a quick cut off of the supply. Ball-valves are pieces of equipment which have tended to be purchased entirely on price without much regard to quality and the probability of maintaining a satisfactory performance for many years without causing trouble. It is worth while seeing that ball-valves comply with B.S.1212 as this insures they are well made and can be relied upon. Be careful however, to see that they have the right requirements as to orifice of feed, and size of float to suit the water pressure in each position.

I still find from time to time cisterns without lids or covers; I feel these are absolutely essential to keep out dust and dirt and even vermin. These covers should fit closely as an insulation and only have such holes in them as are absolutely necessary to receive expansion pipes. I still think that timber makes the best covers as it does not suffer due to condensation and keeps reasonably dust-free on the underside.

ELECTRIC WATER HEATING

No. 2.—PRIVATE HOUSES

By J. Mortimer Hawkins

Electricity for heating water for domestic use can give a continuous and automatic supply of hot water.

There are two ways in which it can be used, firstly by using electricity as the sole source of heat, and secondly by using it in conjunction with a coal fired system, when it will give a constant supply of hot water without the need of using solid fuel in the summer months.

The first method uses the self contained storage water heater, and as it has usually to supply hot water at kitchen sink, bath and wash basin, a pressure type water heater is used. This must be fed from a cold water ball valve tank, as shown in Fig. 1.

The heater is best fitted near to the point where hot water is most often used, namely, at the kitchen sink, thereby shortening as much as possible the hot water pipe between heater and tap at the sink. Every time hot water is drawn from the kitchen tap, the water in the pipe is allowed to cool. In view of the number of times the kitchen tap is used daily this can represent an appreciable heat loss as the following table will show. This table gives the loss of heat due to the pipe and its water content cooling down to 60°F. after each draw off, and

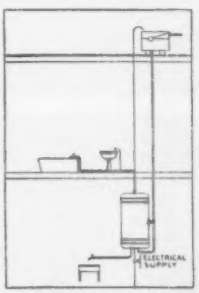


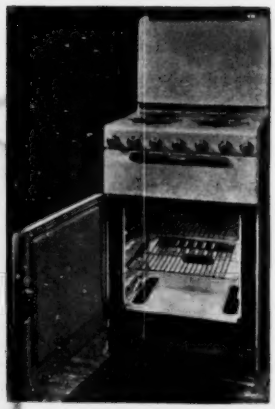
Fig. 1. Plumbing arrangement for pressure type water heater

(continued on page 465)

SERVICES, HEATING B3/17

This fin-back boiler grate is a multiple heating unit; it is an open coke grate for room warming. It heats domestic hot water and will serve a towel rail and a radiator.

In summer a separate gas unit attachment can be inserted for water heating purposes. This attachment is served by a flexible tube and fits snugly into the fireplace opening. The boiler grate is said to effect 20% saving in fuel during winter months.



FITTINGS, GAS COOKERS C6/3

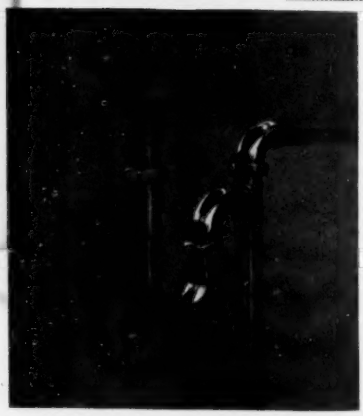
Constructed of sheet steel and cast iron with vitreous-enamel finish this newly produced gas cooker has automatic battery operated ignition controlled from a knob on the gas control panel. A safety device prevents ignition in the oven while the door is closed. Dimensions are 23 inches wide: 36 inches high to hotplate: 22½ inches deep.

There is an extra large grill and the grill chamber is totally enclosed when not in use so that this chamber can also be used as a warming cupboard.

All hotplate parts are interchangeable and the linings of the oven are removable for cleaning.

The oven flue is brought out in front of the back plate. The cooker can therefore be fitted flush against the wall.

This is a luxury product designed by Raymond Loewy.

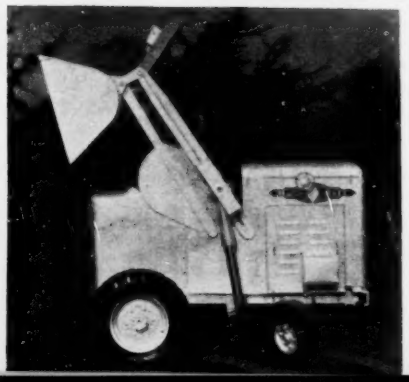


SERVICES, PLUMBING B4/6

Preformed pipes are used in this clean looking waste pipe assembly. The firm responsible concentrates on planned plumbing. The patent joints allow rapid assembly on the job with a minimum of cutting on the site. The method adopted for bending the tubes ensures full bore.

The example illustrated is a prototype produced for the Canadian market. Here the nut is an integral part of the inlet tail pipe of the trap.

Systems produced for the home market have similar clean lines and offer considerable flexibility in the placing of fittings.



PLANT, LOADERS, TRACTORS, ETC. E7/4

Dimensions of this new hydraulic loader, which has a turning circle of 15 feet are as follows: Overall length 10 ft. 6 in.: width 4 ft. 3 in.: wheel base 4 ft.: overall height 5 ft. 1 in. and with bucket raised 8 ft. 9 in.

The bucket capacity is 10½ cu. ft.

A petrol engine developing 35 b.h.p. is standard but an equivalent diesel engine can be supplied.

This model has been designed for work in confined spaces; indoors or out.

MOSAICS

The names and addresses of manufacturers of any item illustrated in MOSAICS, together with more detailed information relating to their products—including price and availability—will be forwarded to readers on request.

Letters should quote the serial number and be addressed to :

The Associate Editor,
The Architect and Building News,
Dorset House,
Stamford Street, S.E.1.

Please mark the envelope MOSAICS.

B. I. F. 1951 BIRMINGHAM

A great deal of information has reached us in the past few weeks from exhibitors at the forthcoming British Industries Fair. The Fair opens on April 30 at Birmingham and at Earls Court, London.

In *The Architect and Building News* of April 27 there will be published a preliminary description of those stands which display exhibits of interest to the Building Industry.

From advance information received it appears that there will be many new products at the Birmingham section of the Fair. These will be referred to in future issues and where possible will be illustrated in Mosaics.

The Fair always attracts large numbers of overseas buyers. At the 1950 B.I.F. there were 19,005 buyers from 100 territories. Invitations to the 1951 Fair numbered 200,000 and the response promises to be good.

In view of this overseas interest in British Goods, readers of the A. & B. N. may wish to be informed of a forthcoming Export Number. In this number many B.I.F. exhibits will be featured. In addition there will be illustrations of building materials which have been used at the Festival of Britain, South Bank Site.

Units of electricity per week per ft. run

Temperature °F.	Galvanized Iron			Copper (Light Gauge)		
	½"	¾"	1"	½"	¾"	1"
120°	0.28	0.44	0.71	0.14	0.28	0.50
140°	0.37	0.59	0.94	0.19	0.38	0.67
160°	0.46	0.74	1.18	0.24	0.47	0.84
180°	0.50	0.89	1.42	0.29	0.57	1.02

assumes the pipe is used only ten times a day; the loss is given per foot run of pipe.

The above table of losses also shows the advantage of using copper pipe as against galvanized iron from an efficiency point of view and applies of course to any form of hot water installation.

When considering the size of a storage heater for any particular installation, one must be chosen which will meet the maximum demand of hot water at any one time.

The choice is usually based on the number of baths which are required to be taken in succession. For instance, a 12-gall. size heater would supply one bath every three hours, but a 20-gall. heater would give two baths in succession. The 20-gall. heater is rapidly becoming the usual size to install in houses with three or four bedrooms, with kitchen, bathroom etc., and when such houses are designed to incorporate electric water heating, all hot water points should be as near one another as possible in order to give economical running costs. That is, have the bathroom immediately above the kitchen or, in the case of bungalows, next to one another.

Water heater manufacturers have produced a 20-gall. heater designed especially for the average type of house being built to-day, see Fig. 2.

Its dimensions are such that it will stand on the floor, under the draining board by the kitchen sink. It has two banks of heating elements, both thermostatically controlled. One, which is continually in circuit, looks after and supplies six gallons of hot water, and this is primarily for use at the sink for washing up etc. When larger quantities of water are required the second bank of elements is brought into circuit by means of a kick-switch and then the full 20 gallons are heated.

This design has proved very successful and economical in installation and running costs. It must of course be fed from a cold water ball valve tank and be provided with a vent pipe generally as shown in Fig. 3.

Like any other storage heater it can also be used in conjunction with a solid fuel boiler if necessary. Suitable plumbing connections would be as in Fig. 4. In the summer months the electric heater undertakes the entire heating. When the solid fuel boiler is in use, the electric heater can be cut out.

The following table gives some running costs of a 20 gallon heater of the type described above when supplying all the hot water in houses with families of 3, 4, and 5 persons.

These figures were taken from a very large housing estate and illustrate how difficult it is to estimate running costs of any water heater installation. The costs are however in direct proportion to the amount of hot water used.

In cases where an existing coal fired installation is converted to coal-electric by fitting an electric immersion heater in the hot water cylinder or tank the high efficiency of the self-contained factory made water heater can only be attained by efficiently insulating the storage tank from thermal loss. The immersion heater, draw off and cold feed pipes must, too, be placed in correct relation to each other. It is also important to see that no taps are fed off the boiler flow pipe. This arrangement is found surprisingly in some installations, and leads to a tepid mixture of cold water from the solid fuel boiler, and hot water from the storage vessel. Again, as in the case of the self-contained heater, hot water pipe runs should be as short as possible, especially the one to the kitchen tap.

It is advisable in some cases when the "dead leg" to the kitchen tap is unduly long, say 20 or 30 ft., to have a small self-contained storage water heater fitted over the kitchen sink, to supply that point only. The immersion heater then supplies bath and wash basin only.

Immersion Heaters can be fitted either vertically or horizontally in tanks or cylinders, but where the water is hard it is advisable to have the heater fitted horizontally.

Most immersion heaters are combined with a thermostat and are incorporated on a head screwed 2¼ in. B.S.P. It is possible however to have a heater and thermostat for separate fixing. In both cases the thermostats should of course be fitted above the level of the heating element.

With any electric hot water system it is essential to conserve heat and thereby prevent waste of electricity. Attention is drawn to the nine points which contribute to an efficient hot water installation. These were given in the first article of this series.

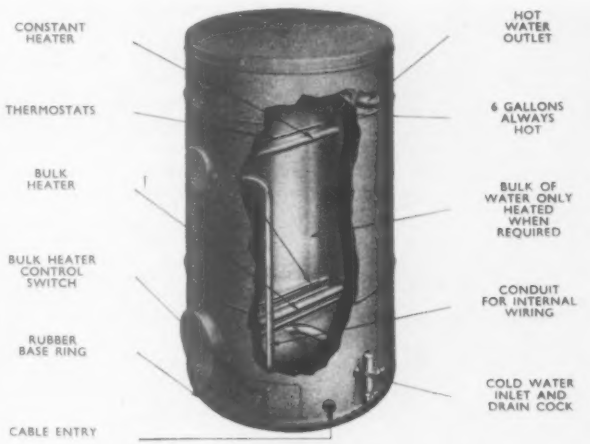


Fig. 2. Dulec water heater showing general arrangement of elements, etc.

No. of Persons in House	2 Adults 1 Child	2 Adults 2 Children	2 Adults 3 Children
Test period in days	204	224	244
Water used (gallons)	3475	4587	3404
Units consumed	1032	1632	1220
Unit charge	½d.	½d.	½d.
Average gallons used per day ..	17.03	20.47	13.95
Average units used per day ..	5.06	7.29	5.0
Average cost per day	2.53d.	5.47d.	3.75d.

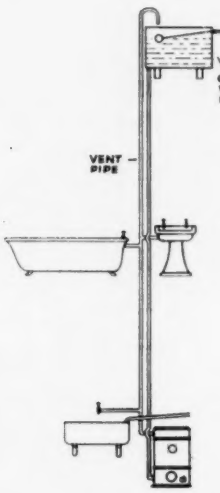


Fig. 3. Dulec heater supplying whole house

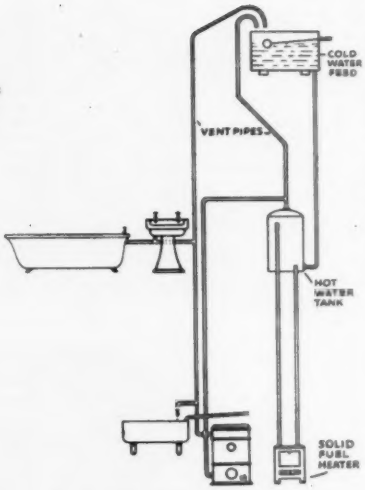


Fig. 4. Dulec fitted in conjunction with coal fired boiler system

The next article will deal with electric water heating in flats.

PLASTERING

No. 1.—By H. Andrews, B.Sc., A.R.I.C.

Many aspects of plastering cannot be covered in detail in this series. These articles deal with some of the more general aspects of plastering which are the concern of those responsible for the building as a whole as well as the more particular details which affect the plastering contractor and the plasterer.

The term "plastering" applies in this series to internal work only. No reference will be made to external work which is sometimes referred to as plastering but more often as external rendering.

The treatment of the subject adopted here is related, to some extent, to the Code of Practice for Internal Plastering fairly recently published in its final form. This document represents the first attempt to codify the complete subject of plastering and was prepared by a committee convened by the Royal Institute of British Architects on behalf of the Codes of Practice Committee set up under the aegis of the Ministry of Works towards the end of the last war. The code is intended to cover all aspects of plastering from the drawing board stage to its final completion and the views of most, if not all, interested bodies were sought during its preparation.

The Functions of Plaster

THE word "functional" is frequently used to-day in architectural and building circles and it may be useful to consider what functions are normally fulfilled by a plaster finish. The primary function of a normal plaster finish is to cover up unevenness in the background and to provide a level, continuous, crack-free and hygienic surface suited to the final decorative finish.

The presence of a plaster finish also affects thermal insulation and sound absorption and transmission. Normal plaster is applied to a thickness of less than one inch and it has a low resistance to the passage of heat. Its effect on the thermal resistance of a 9 inch solid brick wall or an 11 inch cavity brick wall is negligible. Several plasters having better thermal insulation properties than the normal type have been developed, usually for some purpose other than thermal insulation, sound absorption, for example, but even with these the contribution of the plaster is not great.

A normal but undecorated plaster absorbs very little sound and one type of plaster is not significantly better than another in this respect. Special plasters are available however which have high coefficients of sound absorption. If they are to function most effectively they should not be given the usual smooth polished finish and some discretion must be exercised in the type of decorative finish applied. They are usually too prone to damage by knocks to be used on the lower parts of walls. The effect of plaster finishes on sound insulation is negligible.

Planning to Avoid Trouble

One of the first points stressed by the Code is the importance of the early design stages during which decisions are reached on the type of surfaces to which plaster will later be applied. Too frequently plasterers are called upon to apply plaster to unsuitable surfaces. Alternatively an abnormal amount of preparatory work has to be done in order to correct faults which, had proper foresight been exercised, would never have arisen.

Concrete, for example, is often a troublesome background for plaster. Steel shuttering may produce a dense, smooth and perhaps greasy surface; while badly designed timber shuttering may give frequent ridges on the concrete. The smooth surface may need hacking before it can be plastered so that some sort of key is provided, and the ridges should certainly be removed to avoid the application of a dangerous thickness of plaster. Such preparatory work is troublesome, time-consuming, expensive and usually not very effectively done. If consideration had been given at the proper time to the requirements essential to the efficient execution of the plastering the need for such abnormal preparatory work would be removed. The use of surface retarders, the incorporation of mechanical key-forming devices and the use of well designed shuttering will help to give a concrete surface to which plaster may successfully be applied after only a nominal amount of preparation. The application of widely varying thicknesses of plaster to achieve a level surface is another troublesome feature of concrete surfaces which is not unknown but which is avoidable.

Brickwork may easily be prepared for plastering while in course of erection. Joints should be deeply raked to give additional key to the undercoat. If the joints are finished flush with the brickwork by the bricklayer the mortar will be hard when plastering is due to begin and again much time and labour will be unnecessarily expended.

Time Schedule

Delays in building tend to be cumulative and by the time plastering is to be done there may be a tendency to speed everything up. The organization of building work stage by stage in proper sequence is of great importance.

If delay occurs plasterers may be made to start before conditions are suitable and, in particular, before the structure is sufficiently dry. The type of defect which may later develop on this account varies with the type of background. But two or three examples may illustrate the point.

Concrete plastered while it is still wet will shrink after the plaster has been applied causing the plaster to crack or to shell off.

Brickwork may and usually does, contain soluble salts. If the brick is plastered while still wet the salts will move in solution through the plaster and will later come out of solution as a crystalline deposit. This may lead to failure of adhesion to the brickwork, crumbling of the plaster or trouble with the decorative finish.

Gypsum plasters are often used in undercoat mixes and when applied to a wet background may fail to set properly. The result is a weak undercoat which forms an unsatisfactory base for the finishing coat.

Defects such as these would be far less likely to occur if the structure had been given adequate time for drying.

Again, the time allowed for plastering may be cut down with the result that plaster coats are applied one after the other in rapid succession. While it is possible to do this with certain types of plaster the original specification, prepared at the time when such speeding up was not foreseen, may not have anticipated this state of affairs and defects, such as cracking, may result.

If time is short there are considerable

advantages in specifying undercoat mixes based on gypsum plasters particularly those of the retarded hemihydrate class. Such mixes require no damp storage and each coat should not be allowed to dry thoroughly before the next is applied.

A further unpleasant feature of a disorganized time schedule is the disfigurement of finished plasterwork by the other trades who wish to cut out chases or holes. This both spoils the work and discourages the craftsman. The effectiveness of plaster particularly the first undercoats on lathing may be impaired by vibration from other trades during or immediately after application.

(To be continued)

CAST IRON RAINWATER GOODS

The report of The Monopolies and Restrictive Practices' Commission

The report of the monopolies and Restrictive Practices Commission on the Supply of Cast Iron Rainwater Goods was issued on April 4. (H.M.S.O. Price 3s. 6d. net). The report covers the production of rainwater goods, channels of distribution, prices, margins and profits and a description and analysis of the three rainwater agreements now in force, namely (I) England and Wales (II) Scotland (III) Northern Ireland. The agreements are reproduced in an appendix.

The report states that "manufacturers and merchants are encouraged to come into the agreements, provided that they conform to the prescribed definition of eligibility, since thereby the effectiveness of the price ring is increased."

The principal provisions of the Agreement for England and Wales which the Commision has found to restrict competition are set out below:—

(i) The agreement by foundries to fix and maintain common minimum delivered prices and common maximum discounts and allowances applicable to all sales to each class of buyer, the prices to users being the same whether the sales are made by foundries or merchants.

(ii) The agreement by merchants not to re-sell below the minimum prices nor to allow more than the maximum discounts and allowances.

(iii) The merchants' undertaking that they will restrict their purchases of the goods to manufacturers who are parties to the Agreement.

(iv) The corresponding undertaking by the foundries that they will grant merchant terms only to merchants who are parties to the Agreement.

(v) Powers to impose penalties for failure to observe the provisions of the Agreement, consisting of fines in the case of foundries and fines or other penalties in the case of merchants, the most important of which is deprivation of merchant status.

(vi) Agreement on the discounts to be given to merchant signatories; the discounts for A and B merchants, the Super Rebate and (for members of merchant associations) the Association Rebate. The Association and Super Rebates are deferred and payment of them is dependent on a declaration by the recipient that he has observed all the terms of the Agreement.

(vii) Agreement on the types of merchant who may be granted merchant terms, so as to include only wholesale stock-holding merchants, and to exclude fixers except as "otherwise specially determined by the S.J.C."

(viii) The provision that all prices quoted shall be delivered prices and that no allowance shall be made to any buyer arranging his own transport to collect his purchases.

The B.I.A. and the merchant associations contend that the public interest is best served by an industry which produces efficiently the Rainwater Goods which the public requires in accordance with the best methods of manufacture, pays good wages, provides decent working conditions, and sells the goods at a reasonable profit; that these requirements are best met by a well organized industry operating in conditions of reasonable stability, and that it is the purpose of the Rainwater Agreements to maintain such conditions. The associations recognize that a well organized industry which operates restrictive practices can exploit the public, stifle enterprise, protect inefficiency and restrict production. They contend, however, that they have not done, or tried to do, any of these things or used the Rainwater Agreements to these ends, and that there is, therefore, no ground for concluding that the Agreements either operate or are likely to operate against the public interest. The B.I.A. also make it clear that the Rainwater Agreements seek to ensure "equality of opportunity to the producer irrespective of his position in relation to the market for his goods". This, they say, is particularly important to the Scottish foundries which, compared with English foundries, would otherwise be at a disadvantage in quoting prices for the main markets of the South.

Both foundries and merchants claim that price maintenance by foundries is impracticable without resale price maintenance supported by carefully drawn provisions for enforcement; these include the restriction of merchant status to certain defined types of merchant, the classification of buyers, the principle of delivered prices, and the exclusive buying obligations of signatory merchants. The object of the Super Rebate is stated to be the promotion of sales of cast iron goods rather than of goods of alternative materials; and the Association Rebate is justified on the grounds that the organization of the merchant's as well as the manufacturing side of the trade is desirable from every point of view.

In further justification of the Agreements the B.I.A. and the merchant associations have said that the trade in Rainwater Goods is particularly vulnerable to price competition to a degree which is harmful to the public interest. This point is discussed in the report.

Chapters 12 and 13 of the report contain the Commission's conclusions as to (a) the Conditions defined in the Monopolies and Restrictive Practices Act, 1948 and (b) the public interest.

Following are extracts from these chapters:

Our terms of reference require us to report whether conditions to which the Act applies in fact prevail as respects the supply of builders' castings of the descriptions set out in the reference. For the reasons set out in the following paragraphs, we conclude that the conditions prevail, both as regards supply by manufacturers and as regards supply by merchants.

In 1949 the members of the B.I.A. supplied 93.3 per cent. by weight of all the Rainwater Goods which were supplied by manufacturers in that year in the United Kingdom. We have no reason to suppose that there has been any substantial change in this proportion during 1950.

Members of the B.I.A. supplying these goods so conduct their affairs as to restrict competition in connection with the supply thereof, both by operating individually and collectively (through membership of the B.I.A.), one or other of the Rainwater and Soil Goods Merchant Agreements applicable to England and Wales, Scotland and Northern Ireland, which cover 90 per cent. of total supplies in the United Kingdom, and by agreeing to common prices for certain goods not covered by these Agreements.

We estimate that about two-thirds of the total supplies of Rainwater Goods in the United Kingdom are supplied by merchants who are signatories to one or other of the Rainwater Agreements.

We conclude that those merchants so conduct their affairs as to restrict competition in connection with the supply of Rainwater Goods.

We estimate that about 90 per cent. of the above mentioned two-thirds (i.e., about 60 per cent. of the total supplies in the United Kingdom) is supplied by merchants who are also members of one or other of the signatory merchant associations.

We conclude that the signatory members of the merchant associations (*named in the Report*) so conduct their affairs as to restrict competition in connection with the supply of Rainwater Goods by virtue of their membership of the associations, as well as by their individual adherence to one or other of the Rainwater Agreements.

Our terms of reference require us to consider "whether the conditions in question or all or any of the things done as aforesaid operate or may be expected to operate against the public interest", and, under the terms of the Act, we must for this purpose have regard amongst other things to the matters set out in Section 14 of the Act. Before proceeding to this duty we would emphasize that, whereas the conditions found to prevail are matters of fact, our conclusions on public interest must necessarily be matters of opinion. We are not asked to say whether the conditions have in the past operated against the public interest but whether they do so now or are likely to do so in the future.

In our assessment of the effect of the restrictive practices on the public interest, we are principally concerned with the Rainwater Agreements system operated jointly by the manufacturers' and merchants' associations, since these Agreements dominate the trading relations and practices within the industry. We have been obliged, however, to give separate consideration to the restrictive practices of the merchant associations, which are not confined to their share in the administration and enforcement of the Rainwater Agreements. Finally, we have had to bear in mind the position of the Allied Group as a supplier of more than one-third of the Rainwater Goods available to the home market. We comment first on the Allied Group and then, on the Rainwater Agreements and the practices of the merchant associations.

The Allied Group, consists of 10 foundries of which three are now fully mechanized. The Group introduced mechanized methods in its foundries in the 1930's and was the only user of fully mechanized methods before the war. The Group holds an exclusive licence for the use of a centrifugal casting process in the production of Rainwater Goods in the United Kingdom and is developing this process. Two other centrifugal castings systems are, however, being developed by other concerns.

The Allied Group appears to be a lower cost producer than most of the other concerns and obtains advantages from its combination of rationalized production and sales with mechanized methods of production.

The members of the Allied Group are within the B.I.A.; We have not found any evidence that the Group has played any greater part in the creation or maintenance of restrictive practices in the trade than that which arises naturally from the

participation in the Rainwater Agreements of a concern having so large a share of the trade.

The Rainwater Agreements set up a minimum-price ring covering nine-tenths of the trade and are supported by exclusive dealing arrangements. These exclusive dealing arrangements mean in the case of the *manufacturer* that he may give merchant terms (list prices less the merchant discount, the Association Rebate, and the Super Rebate) only to signatories, and the Association Rebate only to members of the merchant associations; and in the case of the *merchant* that he may buy only from B.I.A. members, i.e. that he may not buy on any terms from non-signatory foundries and may not handle imported goods.

Two attempted developments, neither of which came to fruition but either of which, if successful, would have substantially increased the restrictive effect of the Rainwater Agreements were

(i) Before the war, approaches were made to manufacturers of asbestos cement goods by representatives of the B.I.A. with a view to establishing some sort of arrangement on prices and markets.

The discussions came to nothing and we have been assured by the B.I.A. that there is no intention of renewing them; accordingly we proceed on the basis that competition from asbestos cement, as from other alternative materials, will continue.

(ii) Protracted negotiations had been in progress between manufacturers (including the B.I.A.) and merchants (through the D.B.S.J.C.) over several years before the war, with a view to reaching a comprehensive price maintenance system covering a large group of building materials.* They were concerned with a much wider field than Rainwater Goods but the Rainwater Agreements for England & Wales and Scotland contained a specific clause under which price enforcement could be linked as between one trade and another on the lines proposed in the negotiations. Negotiations were, however, discontinued when war broke out and both the B.I.A. and the merchant associations have told us that there would be no objection to the deletion from the Rainwater Agreements of the clause above referred to. We proceed on the assumption that these negotiations will not be resumed.

The B.I.A. and the merchant associations have submitted to us that the Rainwater Agreements are essential in order to assure a fair reward to all those engaged in the supply of Rainwater Goods and to maintain a proper standard of quality and service. We are not disposed to accept this contention. Certain features of the system in our view are not in the public interest. . . . We have come to the conclusion that the operation of the provisions in the system of the Rainwater Agreements is contrary to the public interest in certain important respects, namely:—

(1) Manufacturers and merchants who do not subscribe to the Agreements are excluded from a share in the great bulk of the trade, while those who have subscribed cannot withdraw their support without seriously jeopardizing their business.

(2) Owing to the operation of the minimum price agreement, the introduction of low cost methods of production is retarded, since a manufacturer after signing the Agreements cannot count on the market expansion which lower prices could have secured for him and which might be necessary to justify the commercial commitments involved; while, as a non-signatory, he would be unable to get adequate distributive outlets.

(3) No adequate incentive is given to buyers so to bulk and standardize their demands as to encourage foundries to specialize their production; nor is there any means by which any consequential saving, either in production or in distribution costs, can be passed on to the consumer.

We recommend that those concerned should amend their trading arrangements in such a way as to meet the above objections and that discussions should take place with them for this purpose. In particular, we recommend that there should be no discrimination by foundries either as regards supplies or as regards trade terms on the ground that the merchant has or has not entered into an agreement with the foundries, or is or is not a member of a trade association; and that merchants who buy from non-members of the B.I.A. or who handle imported Rainwater Goods, should not as a result be deprived of supplies from members or obtain them only on less favourable terms.

The merchant associations both individually and through the D.B.S.J.C. adopt definitions of the various types of builders' and plumbers' merchants which are common to the extent that they all exclude, subject to certain qualifications, non-stockholding merchants and merchants with a substantial interest in building or fixing. It is clear from the evidence that it is the object of the associations' policy to close the builders' and plumbers' merchant trade to those who do not conform to these definitions. They seek to obtain recognition for these definitions from manufacturers and thus to ensure that, in general, only concerns complying with the definitions can obtain merchant terms from manufacturers of builders' and plumbers' goods, including Rainwater Goods. The definitions of concerns entitled to merchant terms under the Rainwater Agreements bear a close resemblance to those used by the merchant associations; but they are more liberally interpreted, the manufacturers being less anxious than the merchants to insist on their strict application in all cases.

Finally, we have to consider the enforcement of prices to users by the associations under their own rules, independently of their agreements with manufacturers. So long as this goes no further in the rainwater field (either locally or generally) than it has done up to the present, we do not wish to recommend that the price lists which the associations issue should not continue to cover Rainwater Goods. However, there has been consideration of a stricter enforcement of prices by the associations and it might be possible for them to take action under their rules to prevent the advantages which should accrue to users as a result of the recommendations which we make (*para.* 221) from being passed on by their members. We should regard any such action as contrary to the public interest.

Our comments on the practices which operate or are likely to operate in this industry, and the conclusions we have reached thereon, in no way detract from our appreciation of efforts made by individual merchants and by foundries inside and outside the B.I.A. to meet difficulties which arose between the two world wars and since 1945. Great efforts have been made to rebuild the industry in recent years in the face of severe and persistent shortage of the traditional types of labour, and we note that considerable progress has been made (particularly in the last five years) in the introduction of mechanized methods of manufacture on which new and unskilled labour can be readily trained.

It seems to us apparent, however, that more remains to be done if the industry is to adjust itself to the technical changes now taking place and foreshadowed, and to meet the serious problem of retaining and securing sufficient recruits for the foundries. It has been impressed upon us during the course of this investigation that mechanized methods of production, can only be adopted and effectively used by large foundries able to concentrate on long runs of standardized products. It by no means follows that there will not remain a place for smaller foundries but it seems clear that the maximum production of standardized lines will demand an increasing degree of mechanization.

*These negotiations are described in Chapter 7 of the Report.

This picture shows an arch of the Crystal Palace feature in the recent Ideal Homes' Exhibition. Designed by James Gardner, O.B.E., this feature was built largely of ultra light magnesium alloy. The largest panels measured 6 ft. × 3 ft. and weighed only 15 lbs. If the original Crystal Palace had been constructed in this material instead of cast iron a weight saving of 3,200 tons would have been effected.

CONTRACT • NEWS •

Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ✱ are given in the advertisement section.

OPEN

BUILDING

✱**ALDERSHOT B.C.** (a) Flats in Holly Road. Detached house in Holly Road. 2 pairs of houses in North Lane. (b) Engineer and Surveyor, Municipal Buildings, Grosvenor Road. (c) 2 Gns. each contract. (e) May 18. See page 33.

* * *

BEDFORD B.C. (a) 6 shops and 12 flats above. (b) Borough Engineer, Newnham House, Horne Lane. (c) 3 Gns. (d) Apr. 24.

* * *

CAERNARVON B.C. (a) 6 old persons' dwellings and three-storey block of 6 shops and 6 maisonettes. (b) Borough Engineer, Guildhall. (c) 2 Gns. (d) Apr. 21.

* * *

CAMBRIDGE C.C. (a) 16 houses. (b) City Engineer, The Guildhall. (c) 5 Gns. (d) May 4.

* * *

CAMBRIDGE C.C. (a) 56 houses. (b) City Engineer, The Guildhall. (c) 5 Gns. (d) May 4.

* * *

CEIRIOG R.C. (a) 2 houses and 4 houses, Penybont, demolition of 1-5 Green Uchaf, Llanrhaiadr, erection of a block of flats at Green Uchaf. (b) Council's Surveyor, Council Office, Chirk. (c) 3 Gns. (e) May 3.

* * *

CHIGWELL U.C. (a) 16 flats with 22 maisonettes. (b) Council's Clerk, Council Offices, Old Station Road, Loughton. (d) Apr. 30.

* * *

CLITHEROE B.C. (a) 2 pairs of 3 dwellings and a block of 7 bungalows and 3 blocks of 6 dwellings. (b) Borough Surveyor, Town Hall. (c) 2 Gns. (e) May 12.

* * *

DERBY B.C. (a) 12 houses. (b) Borough Architect, The Council House, Corporation Street. (c) 2 Gns. (e) May 9.

* * *

ECCLES B.C. (a) 28 houses. (b) Borough Engineer, Town Hall. (c) 2 Gns. (e) May 3.

* * *

ESSEX C.C. (a) Pair of cottages at Lordship Farm. (b) County Architect, County Hall, Chelmsford. (d) Apr. 21. Approx. cost £3,250.

* * *

GLOUCESTER C.C. (a) Crematorium building, Coney Hill. (b) City Architect, Suffolk House, Greyfriars. (d) Apr. 23.

* * *

HEYWOOD B.C. (a) Block of 4 maisonettes. (b) A. Middleton, Municipal Buildings. (c) 2 Gns. (e) May 2.

* * *

HYDE B.C. (a) 86 houses. (b) Borough Surveyor, Municipal Buildings. (c) 2 Gns. (e) Apr. 28.

* * *

KINGSTON-UPON-HULL C.C. (a) Supply and erection of structural steelwork for re-roofing of Central Bus Garage, Lombard Street. (b) City Engineer, Guildhall. (c) £5. (e) May 5.

* * *

LEE CONSERVANCY CATCHMENT BOARD. (a) 35 houses. (b) Messrs. Ley, Colbeck & Partners, Palmerston House, 51 Bishopsgate, E.C. (c) 5 Gns. payable to Ley, Colbeck & Partners. (d) Apr. 23. (e) May 17.

LONDON—DEPTFORD B.C. (a) (Block A) 4 shops with basement and 4 two-storey maisonettes above. (Block B) 6 shops with basement and 6 two-storey maisonettes above. (Block C) 8 flats. (Block D) 20 flats. (b) Town Clerk, Deptford Town Hall, New Cross, S.E.14. (c) 2 Gns. (e) May 23.

* * *

LONDON—HENDON B.C. (a) 48 flats. Edgware. (b) Borough Engineer, Town Hall, N.W.4. (c) 3 Gns. (d) Apr. 21.

* * *

LONDON—WALTHAMSTOW B.C. (a) Reconstruction of 4 flats. (b) Borough Architect, Town Hall, Forest Road, E.17. (c) 2 Gns. (d) Apr. 23. (e) May 8.

* * *

LONDON—WANDSWORTH B.C. (a) 3-storey block of 6 flats, Acris Street; 3-storey block of 6 flats, Barmouth Road; 3-storey block of 6 flats, Lambourn Road, Clapham. (b) Town Clerk, Municipal Buildings, S.W.18. (d) May 2.

* * *

LOUTH B.C. (a) 32 houses with paths and drainage. (b) Town Clerk, Town Hall, immediately. (c) 2 Gns. (e) Apr. 27.

* * *

MIDDLESEX C.C. (a) Health clinic, Hayes. (b) Council's Clerk, Guildhall, S.W.1. (c) 2 Gns. (d) Apr. 23. (e) May 21.

* * *

MIDDLESEX C.C. (a) Prefabricated gymnasium, changing rooms and shower baths at Enfield County School. (b) Chief Education Officer, 10 Great George Street, S.W.1. (c) 2 Gns. (d) Apr. 23. (e) May 21.

* * *

NEWCASTLE-UPON-TYNE C.C. (a) Police section station. (b) City Architect, 18 Cloth Market. (c) May 4.

* * *

N. IRELAND—ANTRIM R.C. (a) 12 bungalows with site works, Connor. (b) Messrs. M'Carthy & Lilburn, 47 Scottish Provident Buildings, Belfast. (c) 5 Gns. (e) May 9.

* * *

NORFOLK E.C. (a) New stores, improvements to closets and provision of sewage disposal plant at North Lopham Primary School. (b) Chief Education Officer, County Education Office, Stracey Road, Norwich. (d) Apr. 25.

* * *

NORTH-EAST METROPOLITAN REGIONAL HOSPITAL BOARD. (a) Two low-grade blocks at South Ockendon Mental Colony. (b) Secretary, 11a Portland Place, W.1, immediately, giving details of contracts carried out. Approx. cost £60,000.

* * *

NORTHERN GAS BOARD. (a) Gas booster house and motor house and foundations for 3 boosters at Cannon Street Holder Station of Middlesbrough Unit. (b) Divisional General Manager, Commercial Street, Middlesbrough. (d) Apr. 30.

* * *

NOTTINGHAM C.C. (a) Prefabricated laboratory at Coventry Road Schools, Bulwell, and conveniences at Lenton Schools, Nottingham. (b) City Engineer, Guildhall. (c) £2. (e) May 3.

* * *

NOTTINGHAM C.C. (a) Shelter and conveniences at University Park. (b) City Engineer, Guildhall. (c) £2. (e) Apr. 30.

* * *

OLDBURY B.C. (a) 92 houses. (b) Borough Surveyor, Municipal Bank Chambers. (c) 4 Gns. (d) Apr. 25.

* * *

ONGAR R.C. (a) 7 pairs of houses. (b) Engineer and Surveyor, Bowes Field, High Street, Chipping Ongar. (c) 2 Gns.

* * *

***SHERBORNE R.D.C.** (a) 14 houses. (b) Clerk of the Council, Council Offices, Greenhill. (c) 2 Gns. (d) April 27. (e) May 15. See page 33.

***WIDNES B.C.** (a) 3 Control Houses for Water Dept. (b) Borough Architect, Brendan House, Widnes Road. (c) 1 Gn. (e) May 2. 10 a.m. See page 33.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

BUILDING

BIRKENHEAD. (1) Roads, sewerage etc. (2) Woodchurch Estate. (3) John McGeoch & Son Ltd., Kirkby, Liverpool. (4) £130,032.

* * *

BIRKENHEAD E.C. (1) Superstructure of Technical College. (3) Lloyd & Cross Ltd., Argyle Street, Birkenhead. (4) £538,000.

* * *

BOURNEMOUTH CORPORATION. (1) Workshops and canteen block. (2) Castle Lane transport depot. (3) James Drewitt & Son Ltd., 127 Seaborne Road, Boscombe, Bournemouth. (4) £135,010 and £47,568.

* * *

DURHAM R.D.C. (1) 123 houses. (2) Bowburn. (3) Direct Labour. (1) Roads and sewerage for 132 houses. (2) Bearpark. (3) Direct Labour. Surveyor, K. G. Miller, Durham R.D.C.

* * *

HULL CORPORATION. (1) 102 Non-traditional houses. (2) Bilton Grange Estate. (3) Myton Ltd., Clough Avenue, Hull. (4) £118,640. (1) 20 houses. (3) City Engineer's Department. (4) £23,278.

* * *

MIDDLESEX C.C. (1) Prince of Wales School. (2) Enfield. (3) Walter Lawrence & Sons Ltd., Finsbury, E.C.2. (4) £26,852. (1) Clitterhouse School. (2) Hendon. (3) H. Watts & Son Ltd., (4) £53,700. (1) Sussex Road School. (2) Ickenham. (3) A. E. Prowting Ltd., Ruislip. (4) £51,386. (1) Enlargement. (2) Harrow County School. (3) Leightons (Contractors) Ltd., 10 Chandos Street, W.1. (4) £63,667. (1) Additions. (2) Albany Secondary School. Enfield. (3) G. Bell & Sons Ltd. (4) £30,306. (1) Extension of contract. (2) East Bedfont School. (3) J. Lawson & Co. Ltd., Acton, W.3. (4) £14,960.

* * *

LANCASHIRE COUNTY E.C. (1) First instalment of College of Further Education. (2) Accrington. (3) J. Gerrard & Sons Ltd., Swinton, Manchester. (4) £106,217.

* * *

LEEDS CORPORATION. (1) 322 dwellings. (2) Swinnow, Tinshill, etc. (3) William Airey & Sons (Leeds) Ltd., Leeds, 2. (4) £413,382.

* * *

LIVERPOOL CORPORATION. (1) 285 dwellings. (2) Speke. (3) R. J. Barton & Sons Ltd., de Villiers Avenue, Liverpool 23. (4) £429,000.

* * *

LONDON TRANSPORT EXECUTIVE. (1) Demolition of tram depot and erection of bus garage and office block. (2) New Cross, S.E. (3) Wilson Lovatt & Sons Ltd., 16 Grosvenor Crescent, S.W.1. (4) £260,000. (1) Bus garage and office block. (2) Loughton, Essex. (3) Gee, Walker & Slater Ltd., Park Lane, W.1. (4) £200,000.

* * *

LONDON, W.C. (1) Rebuilding West Wing. (2) Bedford Corner Hotel, Tottenham Court Road. (3) Dove Bros. Ltd., Cloudesley Place, N.1. (4) £79,600. Architects: T. Mortimer Burrows & Partners, London, W.C.1.

OFFICIAL ANNOUNCEMENTS

APPOINTMENTS, CONTRACTS, TENDERS, SITUATIONS VACANT AND WANTED, FOR SALE, MISCELLANEOUS

RATE: 1/6d. per line, minimum 3/- average line 6 words. Each paragraph charged separately.

BOX NOS. add 6 words plus 1/- for registration and forwarding replies.

PRESS DAY Monday. Remittances payable to Iliffe & Sons Ltd., Dorset House, Stamford St., London, S.E.1.

No responsibility accepted for errors.

APPOINTMENTS

LONDON COUNTY COUNCIL.

APPLICATIONS are invited for positions of ARCHITECTURAL ASSISTANT (salaries up to £580 a year) in the Housing and Valuation Department. Commencing salaries will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to assist in the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats) and will be employed in the Housing Architect's Division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required and quote reference A.A.1). Canvassing disqualifies. (816). [0101

COUNTY BOROUGH OF GREAT YARMOUTH.

APPOINTMENT OF ASSISTANT ARCHITECTS.

APPLICATIONS are invited for the following appointments in the Borough Engineer's Department:—

(a) CHIEF ASSISTANT ARCHITECT. Salary—A.P.T. Grade VIII (£685-£760).

(b) SENIOR ASSISTANT ARCHITECT. Salary A.P.T. Grade VII (£635-£710).

Candidates for these appointments should be Associates of the Royal Institute of British Architects. The appointments will be terminable by one month's notice on either side, subject to the provisions of the Local Government Superannuation Act, 1937, and to the passing of a medical examination. Housing accommodation will be offered to the successful applicants if married.

Applications, stating age, qualifications and experience, together with the names of three persons to whom reference could be made, should be enclosed in an envelope endorsed with the title of the appointment, and must be received by me not later than Friday, 27th April, 1951. Canvassing will be deemed a disqualification, and candidates must disclose in writing any relationship to any member or holder of any senior office under the Council. Candidates who fail to do so will be disqualified and, if appointed, will be liable to dismissal without notice.

FARRA CONWAY, Town Clerk.
Town Hall, Great Yarmouth.
4th April, 1951. [5347

BOROUGH OF WALTHAMSTOW COMMITTEE FOR EDUCATION.

APPLICATIONS are invited for the following permanent appointment in the office of the Architect to the Committee, Mr. Frank H. Heaven, A.R.I.B.A., A.R.I.C.S.

CHIEF ASSISTANT ARCHITECT at a salary of £685, rising by increments of £25 to £760 per annum, plus £30 London Weighting (Grade A.P.T. VIII of National Scales).

Applicants must have had considerable experience in an Architect's office in connection with the design, construction and maintenance of educational or similar buildings, and some administrative experience.

Forms of application may be obtained from and should be returned to the undersigned within three weeks of the appearance of this notice.

E. T. POTTER, Borough Education Officer.
Education Offices,
Town Hall, Forest Road, Walthamstow, E.17. [5353

DEVON COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

APPLICATIONS are invited for the undermentioned appointments on the permanent staff. Conditions of Service and salaries are in accordance with the National Joint Council Scheme for Local Authorities.

ASSISTANT ARCHITECTS.
Grade A.P.T. V. (£520-£570 per annum).
Grade A.P.T. III. (£450-£495 per annum).
Grade A.P.T. I. (£390-£435 per annum).
Drawing Office Junior. General Division (salary according to age and experience).

The appointments are subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidates will be required to pass a medical examination.

A weekly allowance of 25s. and return fare home every two months will be paid, for a period not exceeding six months, to the successful candidates, if married, if they have to maintain a family in another home away from Exeter.

Application forms, with full particulars of qualifications and experience required for the various posts, may be obtained from the County Architect, 97 Heavitree Road, Exeter, and must be returned to him by Saturday, the 28th April, 1951.

H. A. DAVIS, Clerk of the County Council.
The Castle, Exeter.
5th April, 1951. [5349

AIR MINISTRY have vacancies for DESIGNER/DRAUGHTSMEN in the Designs Branch of the Works Department in the following fields: Architecture, Drainage and Water Supply, Land Survey. Vacancies are mainly in London but there are some in the provinces. If desired, consideration would be given to making appointments for London only. Salaries are on ranges up to £625 with starting pay in accordance with age and qualifications.—Applications, stating age, qualifications, previous appointments (with dates), should be sent to Air Ministry (S.2.H), Cornwall House, London, S.E.1, from which address further details may also be obtained. [5275

HIS MAJESTY'S COLONIAL SERVICE NIGERIA.

A VACANCY exists for a QUANTITY SURVEYOR in the Public Works Department, Nigeria. Appointment is on 3 years' probation for pensionable employment in the salary scale £570 to £1,300 gross, the point of entry being determined by war service and approved experience. In addition, a temporary allowance of £57 to £100 per annum is payable.

Free first-class passages are provided once each way each tour for an officer and his wife and an allowance up to £75 each per year is payable in respect of a maximum of 2 children. Furnished quarters, if available, are provided at rents of £60 to £90 a year according to salary, and leave is granted at the rate of one week for each month of resident service after a tour of 18 to 24 months.

Candidates must be under 40, have passed the Final examination of the R.I.C.S., and have had wide experience in the preparation of bills of quantities and schedules of materials. They should write for further particulars and a form of application to the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith Street, London, S.W.1, mentioning this paper and quoting No. 27076/48. [5374

HIS MAJESTY'S COLONIAL SERVICE.

SOMALILAND PROTECTORATE.

A VACANCY exists for a QUANTITY SURVEYOR in the Public Works Department, the Somaliland Protectorate. Appointment will be on contract for two tours each of 12 to 15 months, in the salary scale £655 to £1,140, the point of entry being determined by war service and approved experience.

Free first-class passages are granted once each way each tour for the officer, his wife, and up to two children below the age of 18. Partially furnished quarters, if available, are provided at a rent not exceeding 10 per cent. of salary. Leave is granted at the rate of 7 days for each month of resident service.

Candidates, preferably under 40, must be A.R.I.C.S., qualified in the Quantities Sub-division, and have at least 5 years' experience. — They should write for further particulars and a form of application to the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith Street, London, S.W.1, mentioning this paper and quoting No. 27076/47. [5373

CITY OF PORT ELIZABETH.

VACANCY.

SENIOR ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited from suitably qualified and experienced persons for the post of SENIOR ARCHITECTURAL ASSISTANT in the City and Water Engineer's Department at a fixed salary of £800 per annum plus cost of living allowance.

Candidates should be Associates of the Royal Institute of British Architects and have at least eight years' practical experience in architectural design and practice.

Applicants should be physically fit and under 45 years of age.

The successful candidate will be required
(a) to furnish a certificate of medical fitness;
(b) enter into a contract of service of three years' duration with the City Council; thereafter, the appointment will be terminable by one month's notice on either side.

Applications, endorsed "Senior Architectural Assistant," containing full details concerning age, qualifications and experience and enclosing not more than three recent testimonials, will be received by Messrs. Davis & Soper Ltd., 52 and 54 St. Mary Axe, London, E.C.3, not later than the 5th May, 1951.

H. TREDWELL, Town Clerk.
10th April, 1951. [5359

COUNTY BOROUGH OF SOUTHEND-ON-SEA.

EDUCATION COMMITTEE.

MUNICIPAL COLLEGE.

Principal: R. W. Wilson, B.Sc.(Eng.), A.C.G.I., Whit.Sch., D.I.C., A.M.I.E.E.

FULL-TIME ASSISTANT IN THE SCHOOL OF ARCHITECTURE.

APPLICATIONS are invited for the appointment of an ASSISTANT (Grade B) to undertake studio instruction and lecturing in the School of Architecture.

Applicants should be Associates of the R.I.B.A. and must be keenly interested in progressive architectural education. Previous teaching experience is not essential.

Salary: Burnham Technical Report, 1951.

Further particulars and forms of application may be obtained from the undersigned (s.a.e. foolscap).

Completed forms should be returned to the Principal, Municipal College, Victoria Circus, Southend-on-Sea, within 14 days of the appearance of this advertisement.

D. B. BARTLETT, B.A., M.A.Ed.,
Acting Chief Education Officer.
Education Office,
Warrior Square, Southend-on-Sea. [5360

METROPOLITAN BOROUGH OF ISLINGTON.

HOUSING DEPARTMENT.

APPLICATIONS are invited from suitably qualified persons for the following appointments. The salaries quoted are exclusive of London "weighting" of £20 or £30 according to age:—

GENERAL FOREMAN. Grade A.P.T. IV (£480 x £15 - £525 per annum).

CLERK OF WORKS. Grade A.P.T. I (£390 x £15 - £435 per annum).

Forms of application and further particulars may be obtained from the Housing Manager, Housing Department, 220-225 Upper Street, Islington, N.1 (enclose a stamped and addressed foolscap envelope), to whom application should be submitted by 27th April, 1951.

H. DIXON CLARK, Town Clerk.
Town Hall, Upper Street, Islington, N.1.
April, 1951. [5362

THE UNIVERSITY OF SHEFFIELD.

APPLICATIONS are invited for the post of LECTURER or ASSISTANT LECTURER in Architecture, to begin duties as early as possible.

Salary scales: Lecturer, £550-£1,100. Assistant Lecturer, £450-£500, with Superannuation provision under the Federated Superannuation Scheme for Universities, and a family allowance. The commencing salary on either scale will depend upon the qualifications and experience of the successful candidate.

Further particulars may be obtained from the undersigned with whom applications (three copies) including the names and addresses of two referees, should be lodged by 12th May, 1951.

A. W. CHAPMAN, Registrar. [5364

CLERK OF WORKS.

APPLICATIONS are invited for the appointment of Clerk of Works for the erection of a new Works at Banbury, commencing end May. Period of engagement approximately 2 years in the first instance. Salary £15 per week.—Applications, giving details of trade, experience, age, etc., together with copies of three recent testimonials, should be sent to the Architects, Sir Percy Thomas & Son, 10 Cathedral Road, Cardiff. [5363

GOVERNMENT OF NORTHERN IRELAND.

MINISTRY OF FINANCE.

CHIEF ARCHITECT'S BRANCH.

APPLICATIONS are invited for ASSISTANT ARCHITECT posts in the Ministry of Finance. Subject to a probationary period of two years, the posts are permanent and pensionable.

Remuneration: The scale is £500 x £25 - £750.

The entry point to this scale depends on age, viz., £500 at age 26 plus £25 for each year above that age. The upper entry point is, however, subject to a limit of £650 per annum.

Qualifications: Candidates must be Registered Architects by examination. In addition, they must have had at least two years' experience in an Architect's Office or Department in the preparation of working drawings for new buildings.

Preference will be given to candidates who have served in H.M. Forces in war-time, provided that such candidates can, or within a reasonable time will be able to, fill the posts efficiently.

Closing Date for Receipt of Applications: Application forms may be obtained from the Secretary, Civil Service Commission, Stormont, Belfast, to whom they must be returned with copies of two recent testimonials. [5365

BOROUGH OF BARNES.

APPOINTMENT OF PERMANENT ARCHITECTURAL ASSISTANT, GRADE III.

APPLICATIONS are invited for the above-mentioned appointment on the salary scale of £450-£15-£495, plus London Weighting Allowance.

Applicants should have passed the R.I.B.A. Intermediate examination and have had three years' approved experience.

Applicants who have partly completed the above examination will be considered, but if appointed will be placed on a lower Grade until the required qualifications are obtained.

Applications, giving the names of three persons to whom reference can be made, should be addressed to the undersigned not later than Friday, May 4th, 1951.

The Council is unable to provide housing accommodation.

W. R. SHEPHERD, A.M.I.C.E., A.M.T.P.I., Borough Engineer and Surveyor.

Municipal Offices,
Sheen Lane, London, S.W.14.
13th April, 1951. [5382

CITY OF PETERBOROUGH.

APPOINTMENT OF ASSISTANT QUANTITY SURVEYOR.

APPLICATIONS are invited for the above appointment in the City Engineer's Department at a salary in accordance with A.P.T. Grade IV, commencing at £480 per annum; subject to the National Conditions of Service and to one month's notice on either side.

Applicants should have good experience in the measurement of works on site, preparation of interim certificates and final accounts, preparation of bills of quantities under both the Standard Method of Measurement of Building Works and the Code of Practice for the Measurement of Small Dwellings.

Housing accommodation is not immediately available, but the Council will, if necessary, assist so far as they are able the successful applicant to obtain accommodation, but it must be distinctly understood that the Council do not guarantee to find either a house or living accommodation.

Applications, stating age, details of qualifications and experience, together with copies of three recent testimonials, should be delivered to the undersigned in a sealed envelope, and endorsed "Assistant Quantity Surveyor," not later than 5th May, 1951.

Canvassing, directly or indirectly, will be a disqualification, and candidates must disclose whether they are related to any member or senior officer of the Council.

C. PETER CLARKE, Town Clerk.
Town Hall, Peterborough.
April, 1951. [5168

COUNTY BOROUGH OF BURY.

APPLICATIONS are invited for the following positions in the Borough Engineer's Department:—

(a) ESTATES SURVEYOR. Salary up to A.P.T. V (£520-£570).

(b) ARCHITECTURAL ASSISTANT. Salary up to A.P.T. III (£450-£495).

(c) QUANTITY SURVEYOR. Salary up to A.P.T. III (£450-£495).

The commencing salary for each position will be determined in accordance with the qualifications and experience of the applicant and the salary scales prescribed for these positions by the National Joint Council.

The appointments are subject to the Local Government Superannuation Act, 1937, and to medical examination.

Applications, stating age, details of training, qualifications and experience, together with the names and addresses of two persons to whom reference may be made, should reach me not later than the 12th May, 1951.

EDWARD S. SMITH, Town Clerk.
Town Hall, Bury.
13th April, 1951. [5371

CITY OF OXFORD EDUCATION COMMITTEE.

SCHOOLS OF TECHNOLOGY, ART AND COMMERCE.

SCHOOL OF ARCHITECTURE AND BUILDING.

APPLICATIONS are invited for the post of FULL-TIME STUDIO LECTURER and LECTURER in Architectural Design.

Applicants should be Associates or Fellows of the R.I.B.A. and preferably hold the Degree or Diploma of a Recognised School. Salary on the appropriate Grade within the terms of the Burnham (Technical) Report, 1951.

Forms of application and further particulars may be obtained, on receipt of a stamped addressed foolscap envelope, from the Chief Education Officer, City Education Office, 77 George Street, Oxford, to whom completed forms should be returned not later than two weeks from the date of appearance of this advertisement. [5367

BOROUGH OF ABERGAVENNY.

APPOINTMENT OF DEPUTY BOROUGH ENGINEER AND SURVEYOR.

APPLICATIONS are invited for the above appointment on the permanent staff of the Borough Engineer and Surveyor, at a salary in accordance with A.P.T. Grade V (£520 x £15 - £570).

Applicants should have passed the Testamur Examination of the Institute of Municipal Engineers, or equivalent, have an architectural qualification (Inter. R.I.B.A.), and have had at least five years' experience in the department of a Municipal Engineer.

The appointment will be subject to:

(a) The Local Government Superannuation Act, 1937;

(b) A medical examination by the Council's Medical Officer.

(c) The Scheme of Conditions of Service for Administrative, Professional, Technical and Clerical Staffs, and

(d) One calendar month's notice on either side.

Applications, together with copies of three recent testimonials, should be sent to the undersigned not later than the 18th May, 1951.

THOS. G. HARDWICK, Town Clerk.
Town Hall, Abergavenny.
4th April, 1951. [5380

CONTRACTS

SHERBORNE RURAL DISTRICT COUNCIL.

HOUSING TENDERS.

TENDERS are invited for the erection of PREFABRICATED WOOLAWAY HOUSES as follows:—

Hermitage 4. Leigh 4. Alweston 6.

General Condition of the Contract, Bills of Quantities and Form of Tender may be obtained from the undersigned, on receipt of a deposit of £2 2s. 0d., which will be refunded on receipt of a bona-fide tender or the return of all documents. Drawings and site lay-outs may be inspected at the Council Offices, Greenhill, Sherborne.

Applications should be received by April 27th, and tenders, in sealed envelopes marked "Woolaway Housing," must be delivered to me not later than May 15th, 1951.

The Council do not bind themselves to accept the lowest or any tender.

IVOR SARTIN, Clerk of the Council.
Council Offices,
Greenhill, Sherborne, Dorset. [5370

BOROUGH OF ALDERSHOT.

ERECTION OF HOUSES AND BLOCKS OF FLATS.

TENDERS are invited for the construction of:

(a) Two Blocks, each comprising of six flats and two blocks, each comprising of four flats, on three plots of land in Holly Road, Aldershot.

(b) One Detached House, in Holly Road, Aldershot.

(c) Two Pairs of Houses in North Lane, Aldershot.

Contractors may tender for (a), (b) or (c) or the whole or part as desired.

Plans and General Conditions of Contract may be inspected at the Office of the Borough Engineer and Surveyor, Mr. F. W. Taylor, A.M.I.C.E., M.I.Mun.E., M.I.Struct.E., Municipal Buildings, Grosvenor Road, Aldershot, from whom the Bills of Quantities, Forms of Tender and Specifications may be obtained on receipt of a deposit of £2 2s. 0d. for each contract (a), (b) and (c), which will be refunded on receipt of a bona-fide tender not subsequently withdrawn.

Tenders (on the prescribed form) must be delivered in the envelope provided, bearing no name or distinguishing mark indicating the sender, to the undersigned, not later than noon on Friday, 18th May, 1951.

The Council do not bind themselves to accept the lowest or any tender.

D. LLEWELLYN GRIFFITHS, Town Clerk.
Municipal Buildings, Grosvenor Road, Aldershot.
12th April, 1951. [5377

BOROUGH OF WIDNES.

CONTROL HOUSES AT STOCKSWELL (WHISTON), BELLE VALE AND NETHERLEY (LIVERPOOL) PUMPING STATIONS.

TENDERS are invited for the erection of THREE CONTROL HOUSES for the Water Department.

The buildings will be single-storey and of brick and concrete construction, each measuring approximately 700 square feet.

A copy of the Specification, Drawing and Form of Tender may be obtained from the Borough Architect, Brendan House, Widnes Road, Widnes, on the deposit of £1 1s. 0d., which will be refunded on receipt of a bona-fide tender not subsequently withdrawn.

The Conditions of Contract may be inspected on application to the Borough Architect.

Tenders, on the form provided, must be delivered to the undersigned, not later than 10 a.m. on Wednesday, May 2nd, 1951.

The lowest or any tender will not necessarily be accepted.

FRANK HOWARTH, Town Clerk.
Town Hall, Widnes.
11th April, 1951. [5369

ARCHITECTURAL APPOINTMENTS VACANT

ESTABLISHED London firm requires able Assistant. Permanent position. Interested contemporary architecture. Salary £500/650.—Box 0790, The Architect and Building News. [5342

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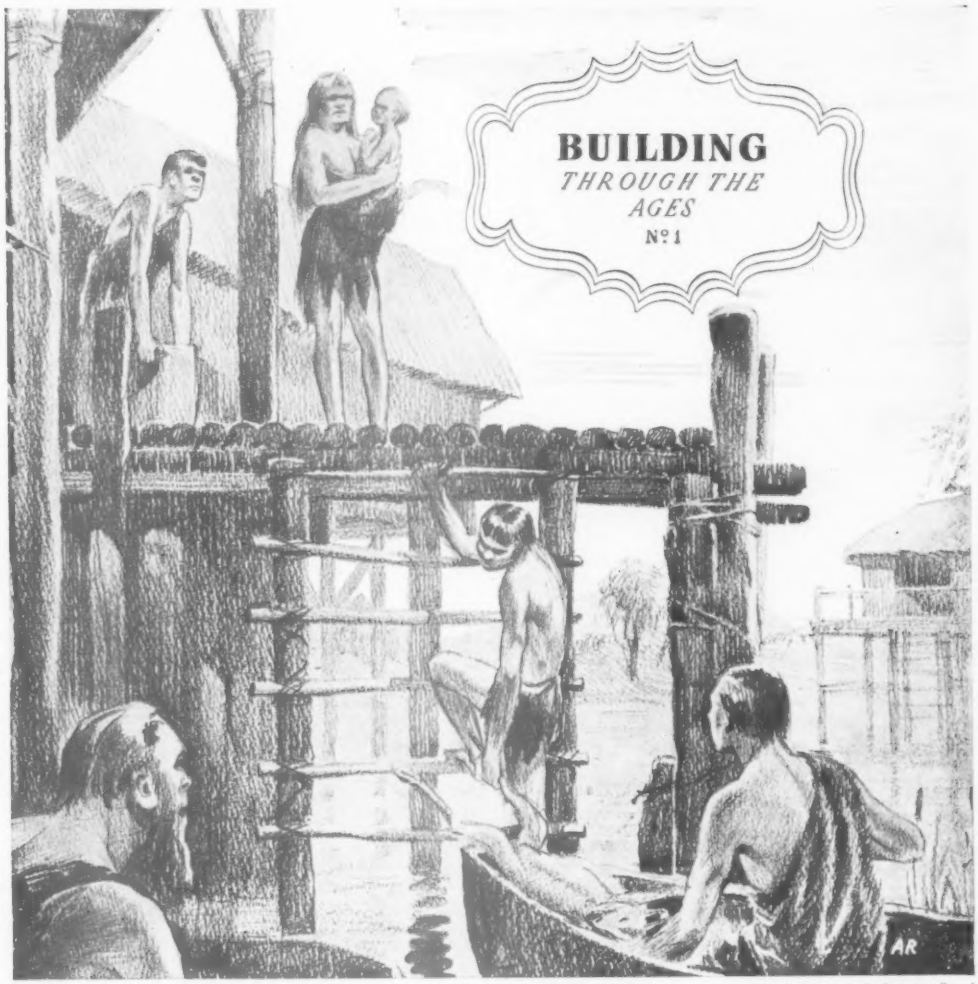

Lake Dwellings of the Neolithic Period

FOR thousands of years in the long and tortuous history of Man, his only shelter from the elements was some dark cave, cleft either by nature or his own crude efforts. The earliest developments which could, by any stretch of imagination, be described as "building" were simple huts of branches or other easily available timbers.

The first buildings of which any reliable data is obtainable were primitive habitations on the edge, or over the waters, of various Swiss lakes. A typical lake village, as shown, was often built some distance out in the lake, this isolation giving protection from enemies, both human and animal.

The piles which supported the huts were cut and fashioned by stone hatchets, or fire, and on this foundation the flimsy shelter was constructed. The floor platform would be fastened to the piles by wooden pins and lashings. The walls were of thin branches and wattle, made as weathertight as possible by coating with clay. The roof of straw, rushes or bark completed the structure.

Such lake dwellings were common all over Europe from 10000 B.C. down to 300 B.C. It was Man's ever-growing ingenuity in building construction which slowly brought about the transition from these crude shelters to more durable and protective edifices.